GoldStar

Service Manual

CS-5200

COMPONENT SYSTEM

CS-5200

rinted in Korea

Nov./1985
N2-094B

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PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual, electrical components having such features are identified by a ⚠ in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitude replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

AMPLIFIER

MODEL: GSA-5200

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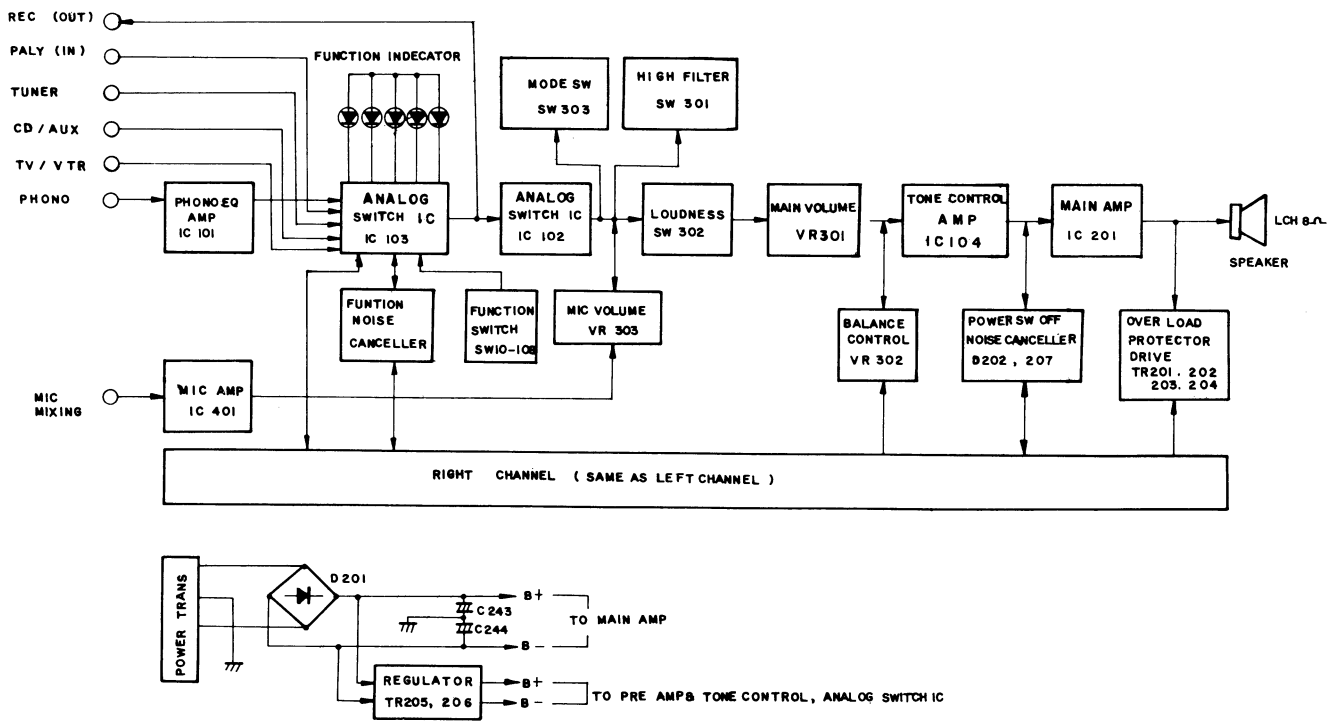
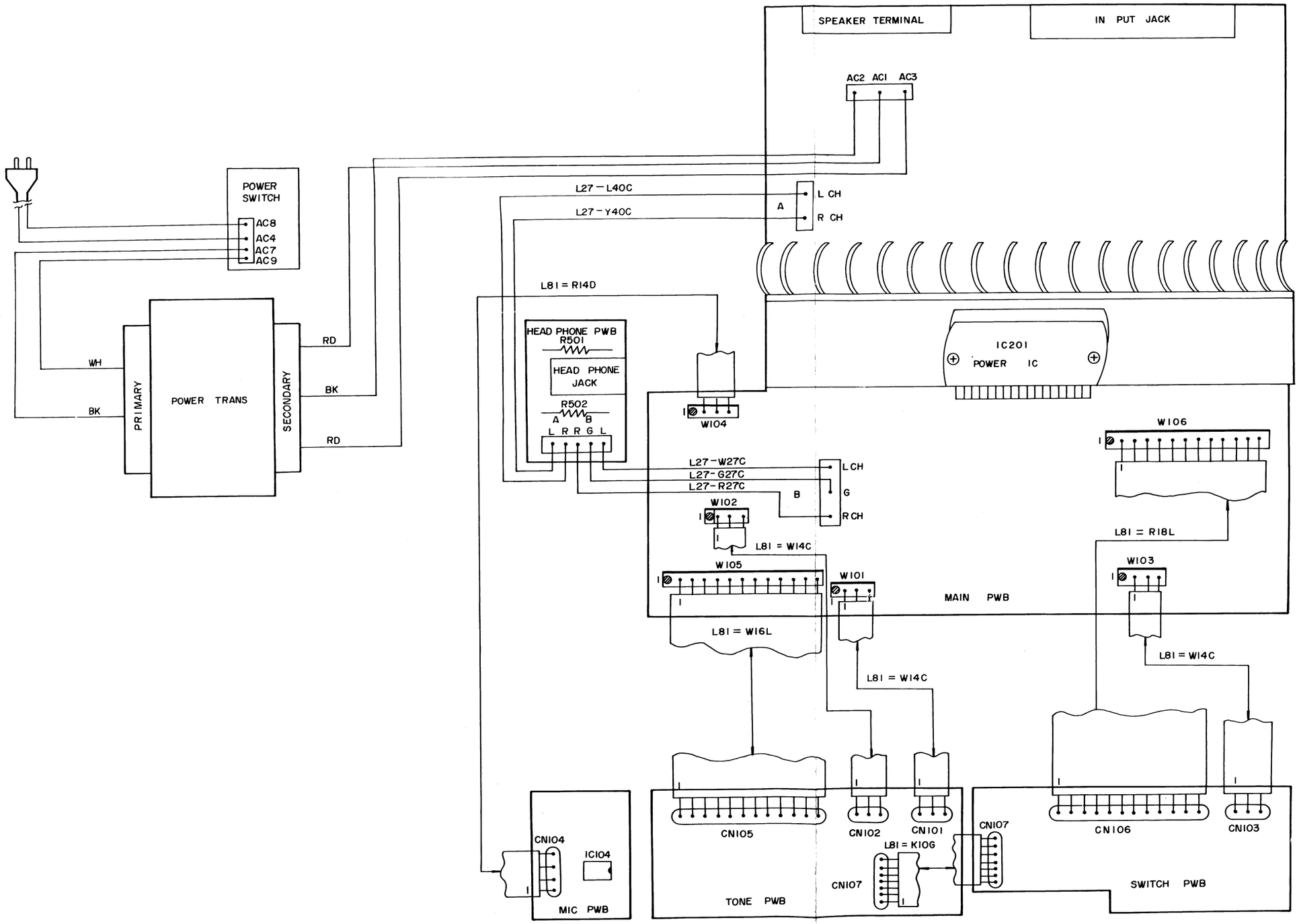
SPECIFICATIONS

Output (0.08% THD, 1kHz, Load 8Ω)	42W
Power Bandwidth	10Hz~30kHz
T.H.D.	0.03%
Intermodulation Distortion	0.03%
Frequency Response (Output 1W, – 3dB)	10Hz~40kHz
S/N ratio	Phono: 70dB, Tuner/AUX/Tape: 95dB
Cross Talk	100Hz: 45dB, 1kHz: 45dB, 100kHz: 40dB
Tone Control	Bass=100Hz: 10dB, Treble=10kHz: 10dB
Input Sensitivity	Phono: 2.5mV, Tape: 150mV, AUX: 150mV
Input Impedance	Phono/Tape/AUX: 47kΩ
Loudness	100Hz: 8.5dB, 10kHz: 5.5dB
Filter	10kHz: –10dB
Power Supply	AC220V, 50Hz

BLOCK DIAGRAM

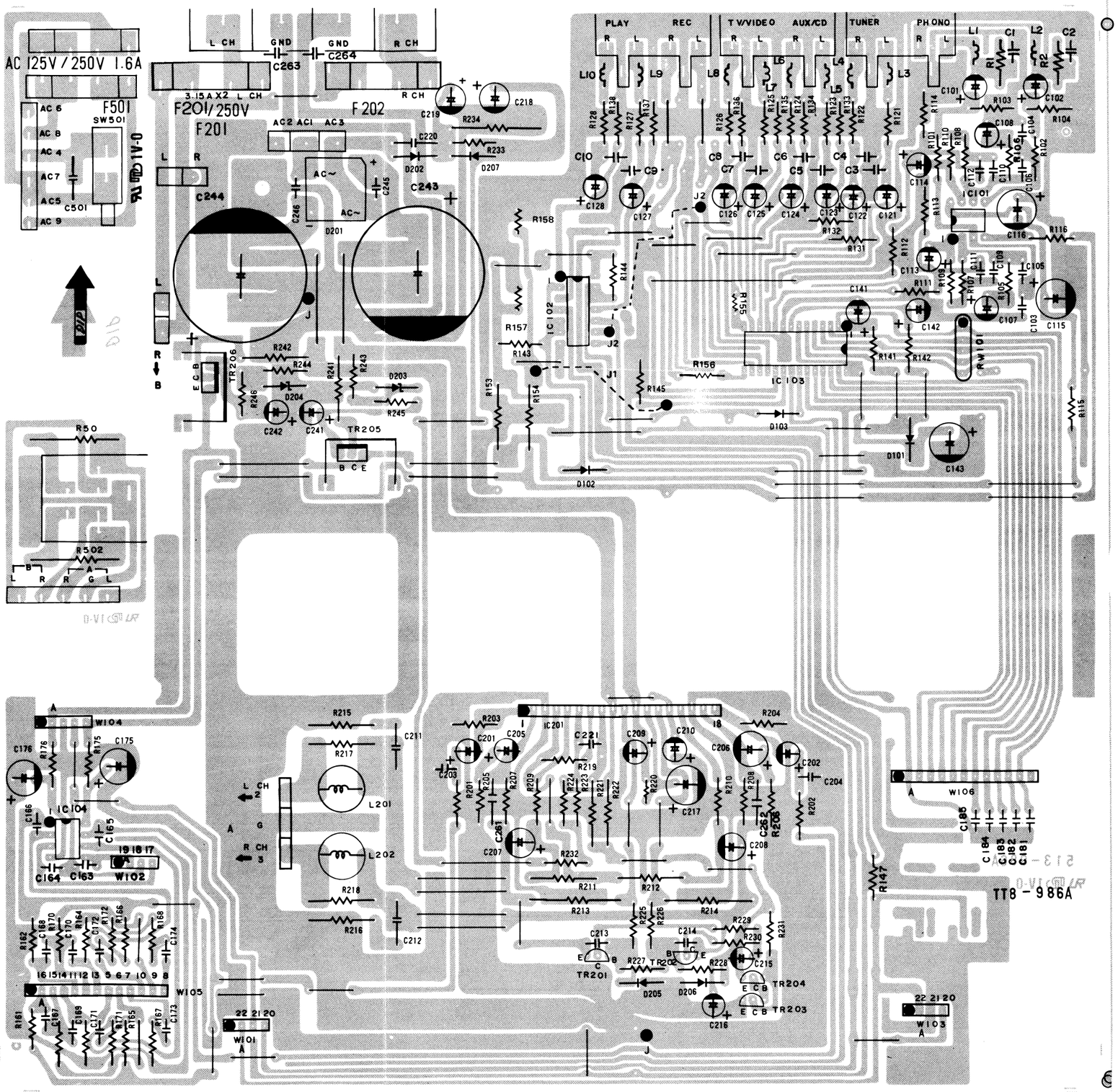


WIRING DIAGRAM

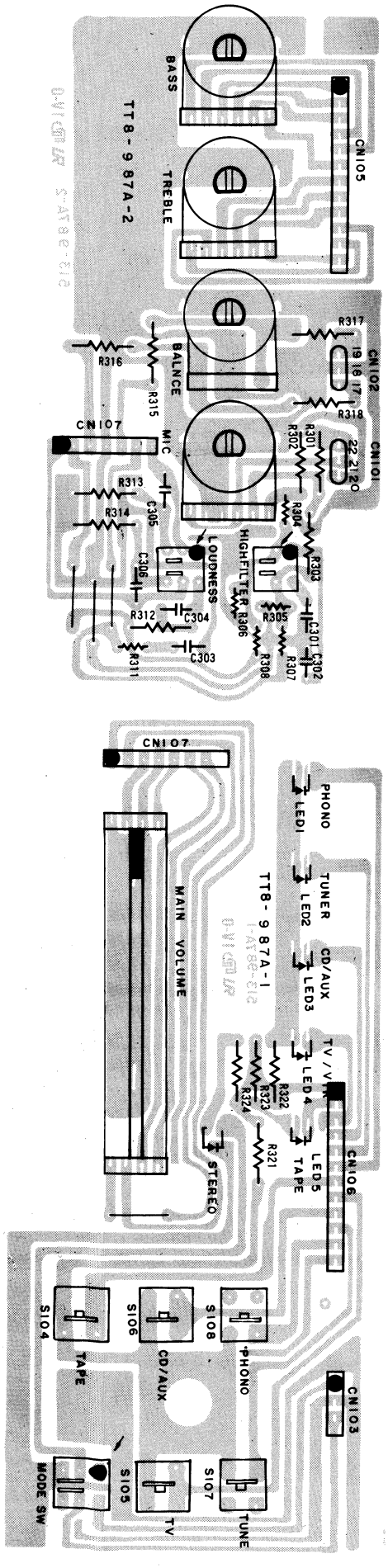


P.C. BOARD ASSEMBLY (COMPONENTS SIDE)

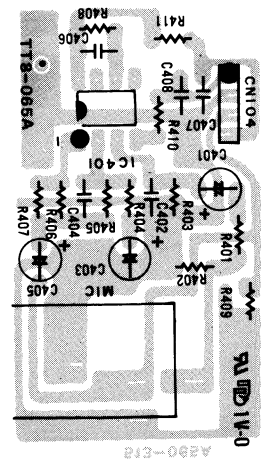
MAIN AMP P.C.BOARD



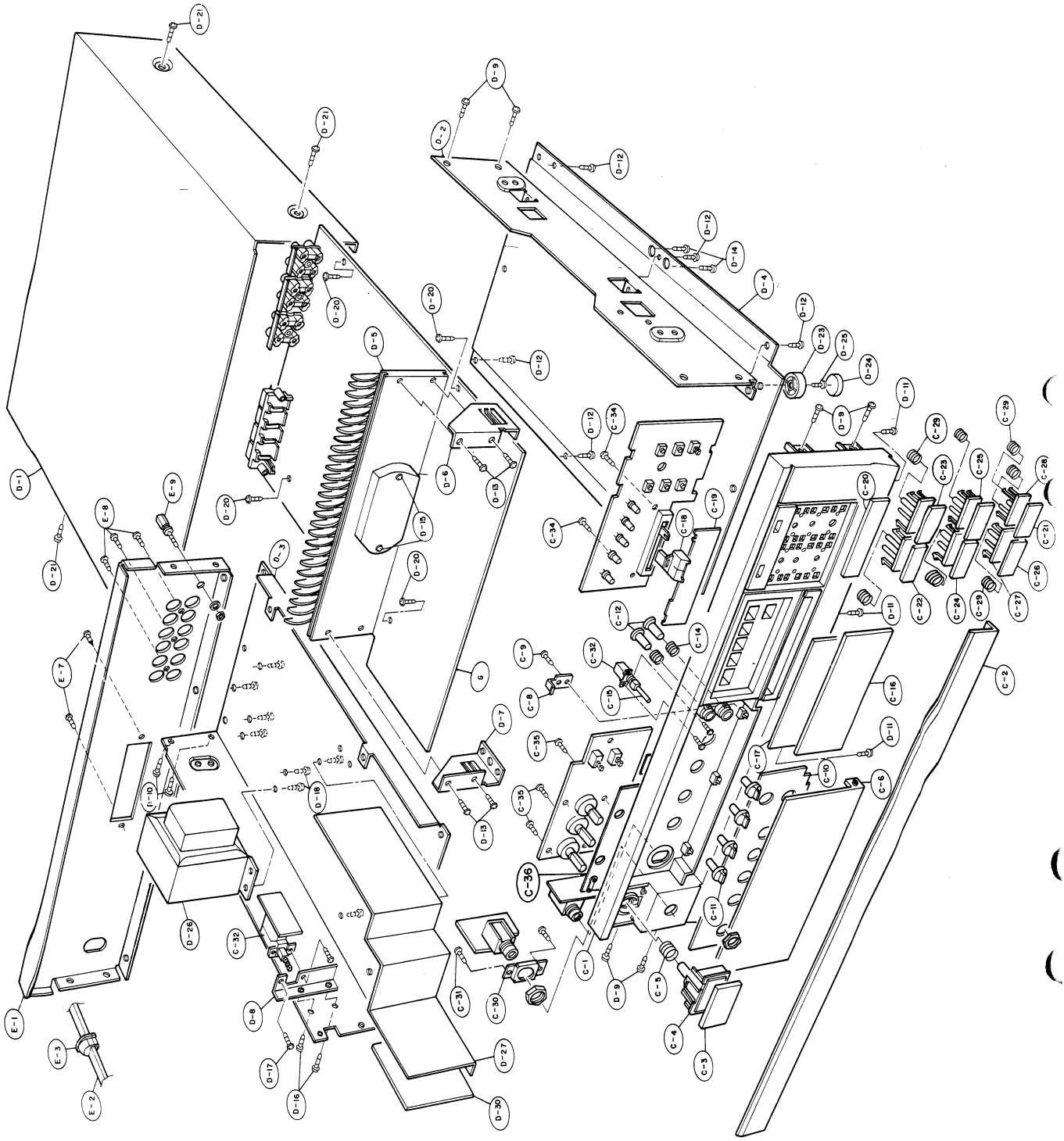
SUB CONTROL P. C. BOARD



MIC AMP P. C. BOARD



EXPLODED VIEW



ELECTRICAL PARTS LIST

CAUTION: A ⚠ in the schematic diagram and the parts list designates components which have special characteristics important to safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2 in this manual. Do not harm the safety of the receiver through improper servicing.

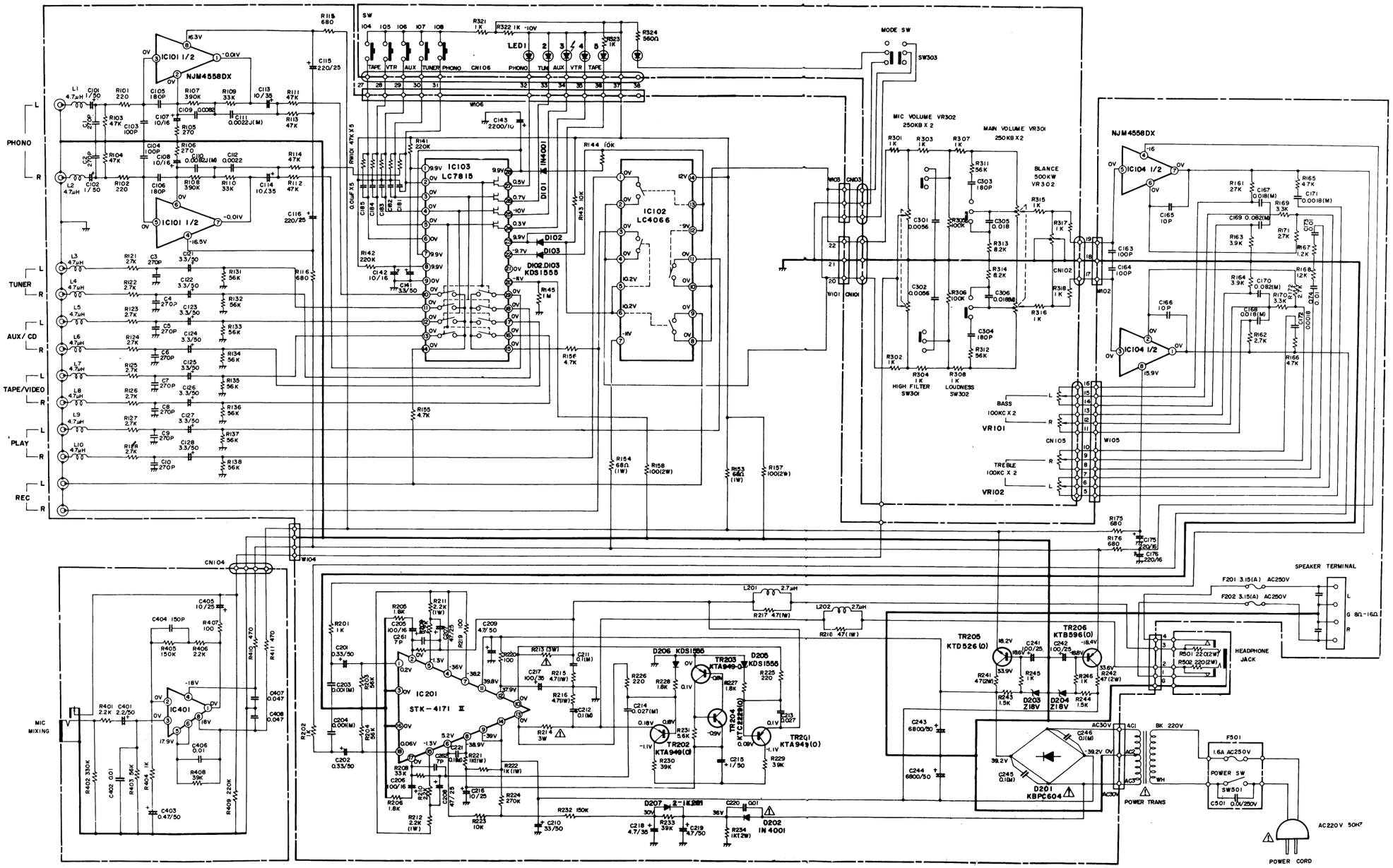
Ref. No.	Mfr's Part No.	Description
INTEGRATED CIRCUITS		
IC101	668-051B	IC, NJM4558DX – OP AMP
IC102	668-662A	IC, LC4066 – ALALOG SW
IC103	668-661A	IC, LC7815 – ALALOG SW
IC104	668-051B	IC, NJM4558DX – OP AMP
IC201	668-414C	IC, STK-471 – POWER
IC401	668-051B	IC, NJM4558DX – OP AMP
TRANSISTORS		
TR201	666-421A	TR, KTA939-0
TR202	666-421A	TR, KTA949-0
TR203	666-421A	TR, KTA949-0
TR204	665-834A	TR, KTC2229-0
TR205	665-708A	TR, KTD526-0
TR206	664N418A	TR, KTB596-0
DIODES		
D101	652-005C	DIODE, RECT DS4001
D102	652-015B	DIODE, SWITCH KDS1555
D103	652-015B	DIODE, SWITCH KDS1555
D201	652-611A	DIODE, RECT KBPC604
D202	652-005C	DIODE, RECT DS4001
D203	654-607D	DIODE, ZENER ZPD-18
D204	654-607D	DIODE, ZENER ZPD-18
D205	652-015B	DIODE, SWITCH KDS1555
D206	652-015B	DIODE, SWITCH KDS1555
D207	651-001D	DIODE, DETECT FM 2-1K261
LED1	653-636D	LED, SLR54GC3-H
LED2	653-636B	LED, SLR54RC3 GN
LED3	653-636B	LED, SLR54RC3 GN
LED4	653-636B	LED, SLR54RC3 GN
LED5	653-636B	LED, SLR54RC3 GN
LED6	653-636A	LED, SLR54URC3 RD
COILS		
L1-10	637-604A	INDUCTOR FIXED 2 CORE 47μH
L201	636-603B	COIL, CHOKE 2.7μH
L202	636-603B	COIL, CHOKE 2.7μH

Ref. No.	Mfr's Part No.	Description
SWITCHES AND VOLUMES		
SW101	554-633A	SW, SEA12A, 2P(S) SELF-LOCK
SW102	554-633A	SW, SEA12A, 2P(S) SELF-LOCK
SW103	554-633A	SW, SEA12A, 2P(S) SELF-LOCK
SW104	558-026A	SW, TACT KPT-1105 (T-S-06)
SW105	558-026A	SW, TACT KPT-1105 (T-S-06)
SW106	558-026A	SW, TACT KPT-1105 (T-S-06)
SW107	558-026A	SW, TACT KPT-1105 (T-S-06)
SW108	558-026A	SW, TACT KPT-1105 (T-S-06)
SW501	554-612B	SW, POWER SDLIP
VR201	612-618B	VR, SLIDE S4528GB-250KBx2 L=10
VR202	611-647U	VR, K161BOO-500KW L=25
VR203	611-647V	VR, K162TOG-100KCx2 L=25
VR204	611-647V	VR, K162TOG-100KCx2 L=25
VR205	611-640B	VR, K162TOO-100KBx2 L=25
MISCELLANEOUS PARTS		
JT101	576-002A	JACK BLOCK S-437P
JT102	576-002A	JACK BLOCK S-437P
JT103	576-002A	JACK BLOCK S-437P
JT104	561-100A	SPEAKER TERMINAL S-Q2713
PJ101	572-159D	JACK D=6.4 HLJ0305-01-040
PJ401	572-195D	JACK D=6.4 HLJ0305-01-040
⚠ F1	585-112B	FUSE 5x20 250V 1.6A
⚠ F2	585-112B	FUSE 5x20 250V 1.6A
SP CUT	585-216C	FUSE 5x20 250V 3.15A
	586-101A	FUSE HOLDER KS CLIP TYPE
R153	RS680J07	R, METAL OXIDE 68-J 2WP
R154	RS680J07	R, METAL OXIDE 68-J 2WP
R157	RS121J07	R, METAL OXIDE 120-J 2WP
R158	RS121J07	R, METAL OXIDE 120-J 2WP
R211	RS222J05	R, METAL OXIDE 2.2KΩ 1W
R212	RS222J05	R, METAL OXIDE 2.2KΩ 1W
R213	614-005T	R, REC WIRE WOUND 3W 0.22J
R214	614-005T	R, REC WIRE WOUND 3W 0.22J
R215	RS4R7J05	R, METAL OXIDE 4.7Ω 1W
R216	RS4R7J05	R, METAL OXIDE 4.7Ω 1W
R217	RS4R7J05	R, METAL OXIDE 4.7Ω 1W
R218	RS4R7J05	R, METAL OXIDE 4.7Ω 1W
R501	RS221J07	R, METAL OXIDE 220Ω 2W
R502	RS221J07	R, METAL OXIDE 220Ω 2W

MECHANICAL PARTS LIST

Ref. No.	Mfr's Part No.	Description
C-1	258-520A	Panel, Front
C-2	246-511B	Deco, Front (With Inlet-GOLD STAR)
C-3	273-800A	Knob, Power
C-4	324-331A	Holder, Power-Knob
C-5	442-634X	Spring, Power Knob
C-6	226-510B	Door, Function
C-8	442-510A	Spring, Door (For Door Eject)
C-9	353-025F	Screw, Special (For Fix Spring Door)
C-10	246-520B	Deco, Plate Function (A)
C-11	273-513A	Knob, Rotary
C-12	273-514A	Knob, Push
C-14	442-634W	Spring, Knob Power
C-15	273-515A	Knob, Open
C-16	236-510A	Window, Func. Led
C-17	236-512B	Window, Inner
C-18	273-526B	Knob, Slide Volume
C-19	246-515A	Deco, Volume Knob
C-20	273-510A	Knob Deco
C-21	273-511G	Knob Deco Mode
C-22	273-511B	Knob Deco Phono
C-23	273-511C	Knob Deco Tuner
C-24	273-511D	Knob Deco CD/Aux
C-25	273-511E	Knob Deco TV/VTR
C-26	273-511S	Knob Deco (Tape Mon.)
C-27	324-510A	Holder, Knob (A)
C-28	324-511A	Holder, Knob (B)
C-29	442-634G	Spring, Knob
C-30	321-414A	Bracket Phone Jack
C-31	353-025F	Screw, Special (For Fix Bracket Phone Jack)
C-32	554-634A	SW, Push Terminal
C-33	MRC0930J	Screw MRC 2x6 (For Fix Push SW)
C-34	353-025G	Screw, Special (For Fix Volume PWB)
C-35	353-025G	Screw, Special (For Fix Control PWB)
C-36	256-877A	Plate Shield
D-1	213-510A	Cabinet
D-2	315-510A	Frame Side
D-3	313-510A	Chassis Bottom
D-4	256-520A	Plate Bottom
D-5	255-510A	Heat Sink
D-6	321-411A	Bracket Heatsink (L)
D-7	321-407A	Bracket Heatsink (R)
D-8	321-410A	Bracket Power SW
D-9	TRQ1830J	Screw, TRQ2+3x6A (Front +Frame Side)
D-10	TRQ1830J	Screw, TRQ2+3x6A (Front +Chassis Bottom+Back)
D-11	TCQ1830J	Screw, Tapping TC3+3x6 (Front +Chassis, Frame, Plate/Bottom)
D-12	TRR1830J	Screw, TRR3+3x6 (Plate Bottom +Chassis Frame, Back)
D-13	TRQ1830J	Screw, TRQ2+3x6A (Bracket Heatsink+Heatsink)
D-14	TRQ1830J	Screw, TRQ2+3x6A (Bracket Heatsink + Chassis, Frame)
D-15	TRQ1846J	Screw, TRQ2+3x20A (IC+ Heatsink)
D-16	TRQ1830J	Screw, TRQ2+3x6A (Fix Bracket Power SW)
D-17	MRC1830J	Screw (Fix Power SW)
D-18	TRQ2241K	Screw TRQ+4x12WH (Fix Power Trans)
D-20	TRQ1830J	Screw, TRQ2+3x6A (Fix Main PWB)
D-21	353-633A	Screw, Special (Fix Cabinet-Side)
D-23	265-024A	Foot CA-940 (Mould Only)
D-24	472-610B	Felt (Under Foot)
D-25	TRQ1830J	Screw, TRQ2+3x6A (Fix Foot)
D-26⚠	641-712C	Trans Power AC 220V 50Hz
D-27	256-869A	Shield Plate
D-28	TRQ1830J	Screw, TRQ2+3x6A (For Fix Shield Plate)
D-30	256-876A	Plate Fiber
D-31	447-606P	Cushion
D-32	TBQ1830J	Screw, TBQ+3x6 Fzmy (Back+ Frame Side)
D-33	TBQ1830J	Screw, TBQ+3x6 Fzmy (Chassis Bottom+Back)
D-34	TRQ1830J	Screw, TRQ2+3x6A (Bracket + Frame Side+Bottom)
E-1	258-510D	Panel Back
E-2	681-003D	Power Cord
E-3	324-348A	Holder, Cord Heyco Sr-Sn-4 HPO
E-7	TRQ1839I	Screw, TRQ253x10A FBK (For Fix Speaker Terminal)
E-8	TRQ1839I	Screw, TRQ253x10A FBK
E-9	563-606A	Terminal Ground
G	511-986M	PWB Ay Main Amp
	511-987K	PWB Ay Sub Control
	511-065A	PWB Ay Mic Amp

SCHEMATIC DIAGRAM



NOTES
1. S101 – S108 SWITCH POSITION OFF
2. ALL RESISTANCE VALUES TRE INDICATED IN "OHM" (K=10^3 OHM, M=10^6 OHM)
3. ALL CAPACITANCE VALUES ARE INDICATED IN "μF"=10^{-6}, P=10^{-12}μF
4. THE PARTS WITH EXCLAIMATION MARK ⚠ IN THE CIRCUIT DIAGRAM ARE KEY PARTS SAFETY REGULATION.
5. THIS SCHEMATIC DIAGRAM BE CHANGED WITHOUT NOTICE FOR IMPROVEMENT OF PERFORMANCE.

AM/FM STEREO TUNER

MODEL: GST-5200

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SPECIFICATIONS

AM PARTS

Frequency Range	522~1,611kHz
IF	450kHz
Usable Sensitivity (20dB S/N)	603, 1008, 1404kHz: 46dB/m
Image Rejection Ratio	1404kHz: 35dB
IF Rejection Ratio	603kHz: 40dB
Selectivity	1008kHz: 40dB
S/N Ratio (94dB Input)	1008kHz: 50dB
T.H.D.. (30% Mod. 74dB Input)	1008kHz: 1%
Frequency Response (–6 dB)	80~2300Hz
Output Voltage (30% Mod. 74dB Input)	1008kHz: 200mV

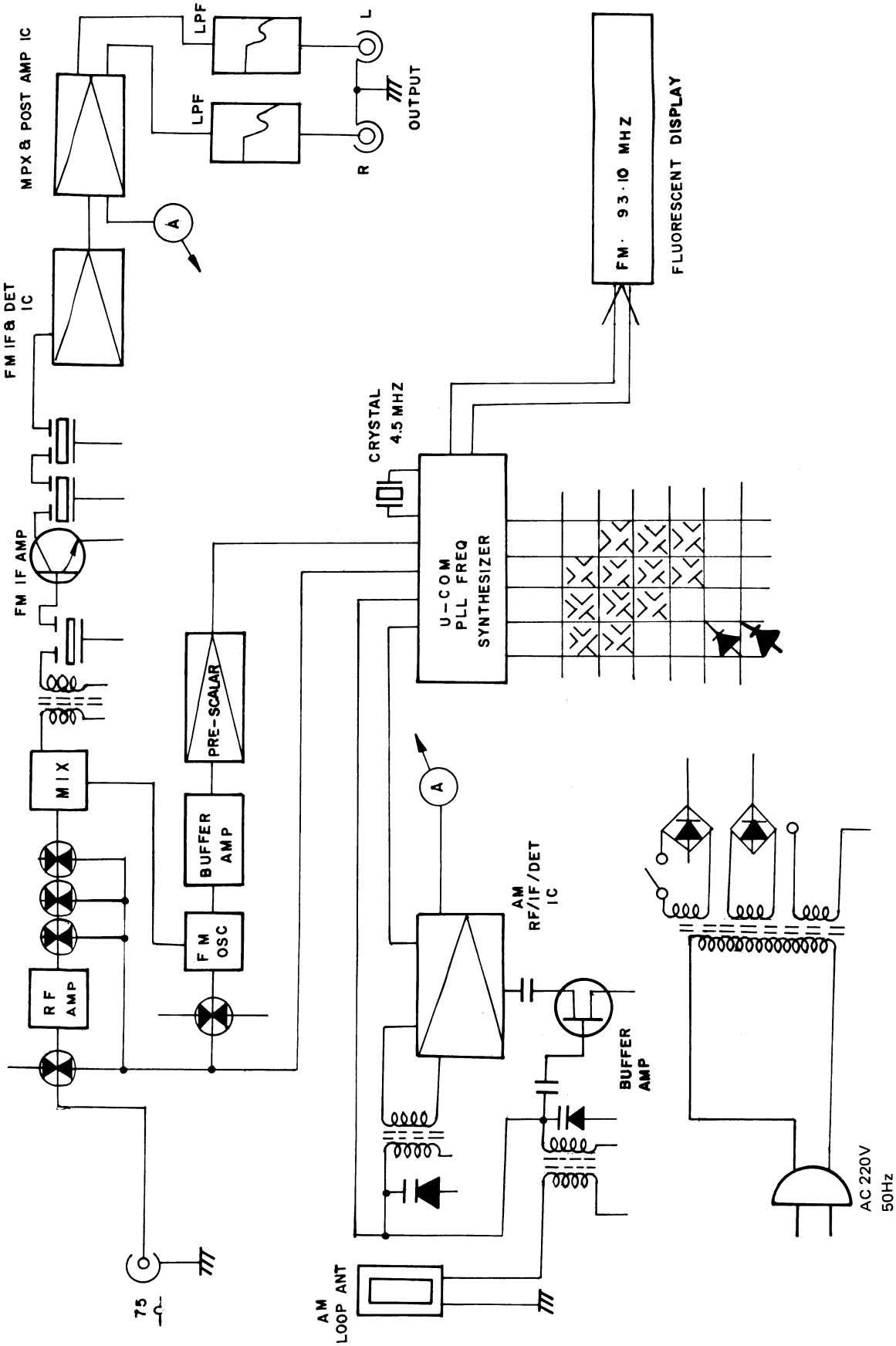
FM PARTS

Frequency Range	87.5~108.0MHz
IF	10.7MHz
Usable Sensitivity (26dB S/N)	0.8μV
S/N Ratio	98.1MHz: Mono= 70dB, Stereo= 65dB
Image Rejection Ratio	106.1MHz: 85dB
IF Rejection Ratio	90.1MHz: 100dB
T.H.D..	98.1MHz: Mono= 0.15%, Stereo= 0.2%
Frequency Response (–1dB, At Pre-Emphasis)	20~15,000Hz
Stereo Separation	100Hz: 40dB, 1kHz: 45dB, 10kHz: 35dB
Output Voltage (75kHz Dev.)	98.1MHz: 400mV

GENERAL

Power Supply	AC 220V, 50Hz
Power Consumption	7.5W
Size	278x65x345mm

BLOCK DIAGRAM



ALIGNMENT INSTRUCTIONS

EQUIPMENT NEEDED:

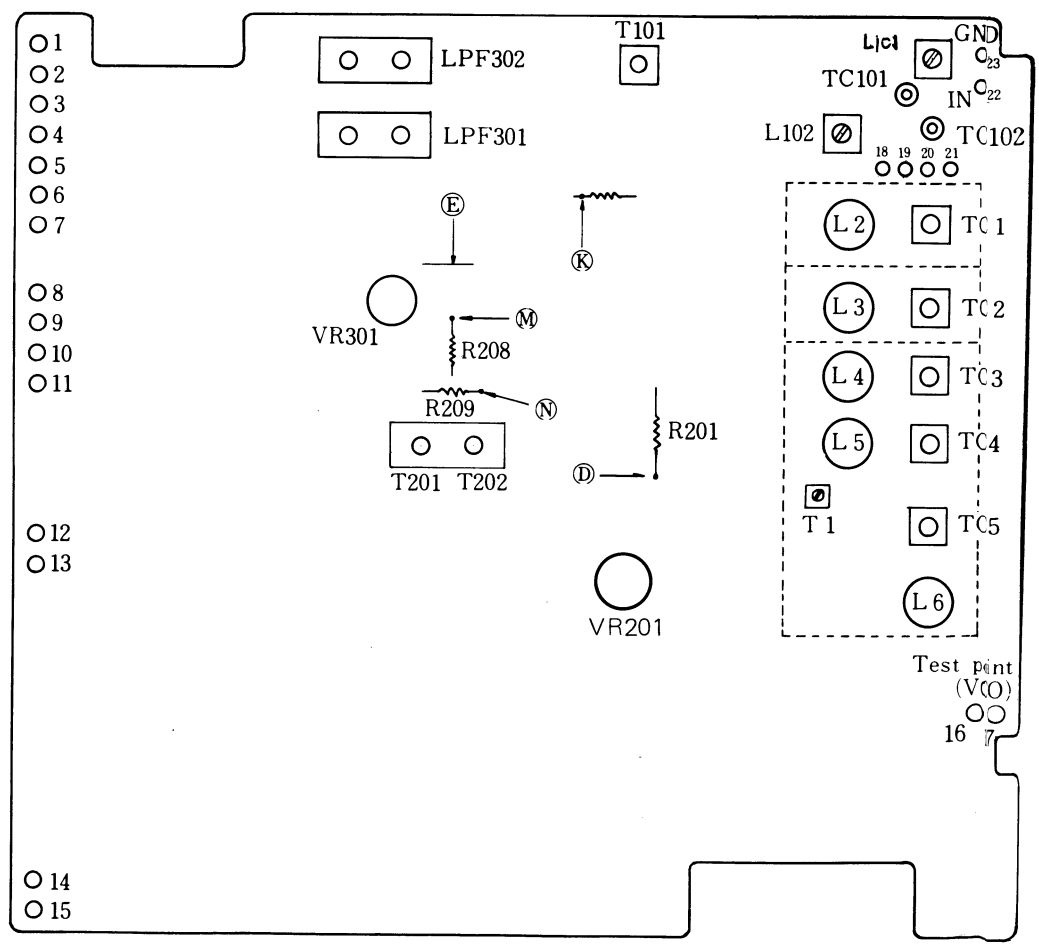
1. AM Signal Generator
2. FM Signal Generator
3. AM/FM IF Genescope
4. Oscilloscope
5. VTVM
6. Test loop antenna (AM Adjustment)
7. Dummy antenna (FM Adjustment)
8. Stereo signal modulator
9. Frequency counter

IMPORTANT

1. Check power-source voltage.
2. Set the function switch to band being aligned.
3. Keep the signal input as low as possible to adjust accurately.
4. Modulation and modulation frequency:

Band \ Item	Modulation	Modulation frequency.
AM	1 kHz	30%
FM	1 kHz	100% (75 kHz Dev.)

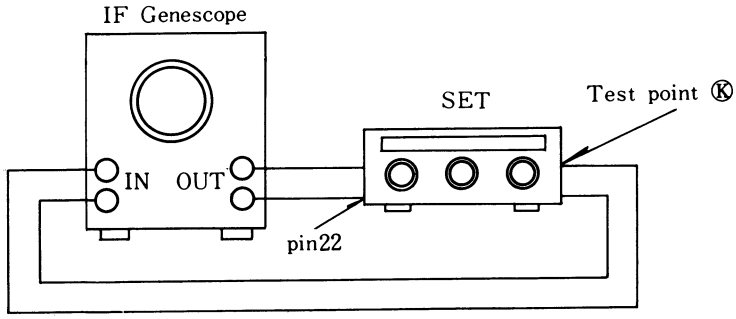
TEST AND ADJUSTMENT POINT



MAIN P.C BOARD

AM IF ADJUSTMENT

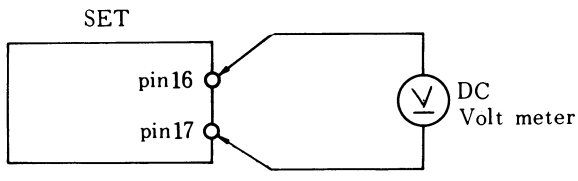
IF Genescope . . . . . .The input connects to the test point "Ⓚ", the output connects to pin 22.
Adjust for the IF wave form of Genescope to be maximum.



IF	Adjust for	Adjustment
450 kHz	Maximum	T101

AM RF ADJUSTMENT (Cover range & Tracking)

DC Volt Meter . . . . . .Connect to pin16 and pin17.



(Cover range voltage alignment connection diagram)

NO.	Frequency	Adjust for	Adjustment
1	522kHz	2V	L102
2	1611kHz	24.5V	TC102
3	Repeat steps 1 and 2 several times		
4	594kHz	Maximum sensitivity	L101
5	1395kHz	Maximum sensitivity	TC101
6	Repeat steps 4 and 5 several times.		

FM IF ADJUSTMENT

IF Genescope . . . . . .The input connects to the test point "Ⓔ", the output connects to "Ⓓ".
DC Volt Meter . . . . . .Connect to test point "Ⓜ" and "Ⓝ" (Both side R208 and R209).

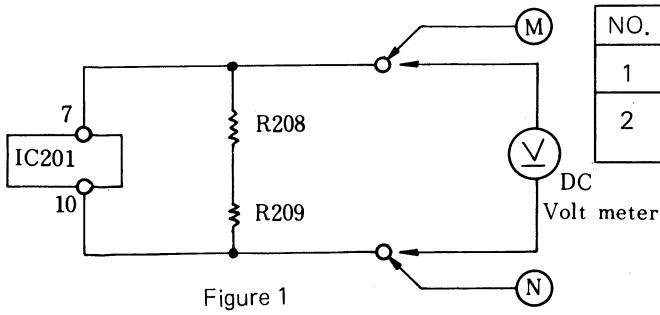
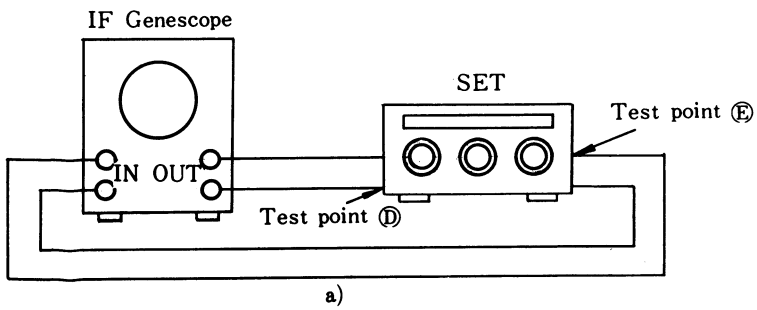
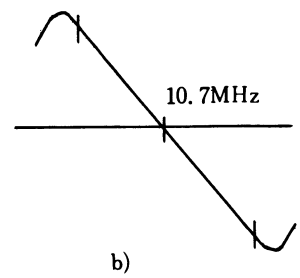


Figure 1

NO.	Adjust for	Adjustment	Remark
1	0V	T201	See figure 1.
2	Maximum linear S curve	T202	See figure 2-(a),(b)



a)

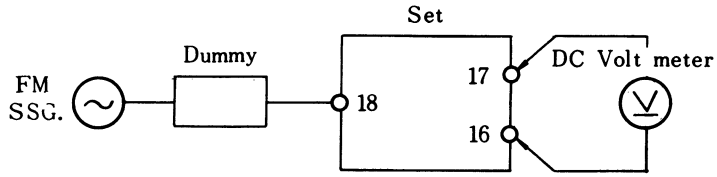


b)

Figure 2

FM RF (Cover range & Tracking)

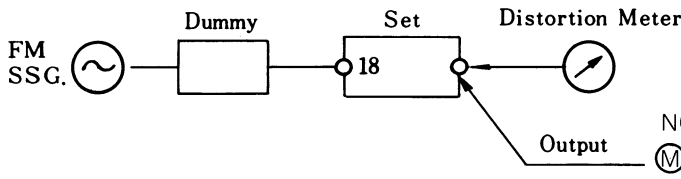
Signal Generator . . . . . .Connect to FM Ant (Pin18) through the dummy.
DC Volt Meter . . . . . .Connect to FM VCO (Pin17) and GND (Pin16).



NO.	Frequency	Adjust for	Adjustment
1	87.9MHz	4.5V	L6
2	107.9MHz	24.5V	TC5
3	Repeat steps 1 and 2 several times.		
4	90.1MHz	Maximum sensitivity	L2, L3, L4, L5, T1
5	106.1MHz	Maximum sensitivity	TC1, TC2, TC3, TC4, T1
6	Repeat steps 4 and 5 several times.		

FM T.H.D. ADJUSTMENT

Signal Generator . . . . . .Connect to FM Ant (Pin 18) through the dummy.
Distortion Meter . . . . . .Connect to the output.

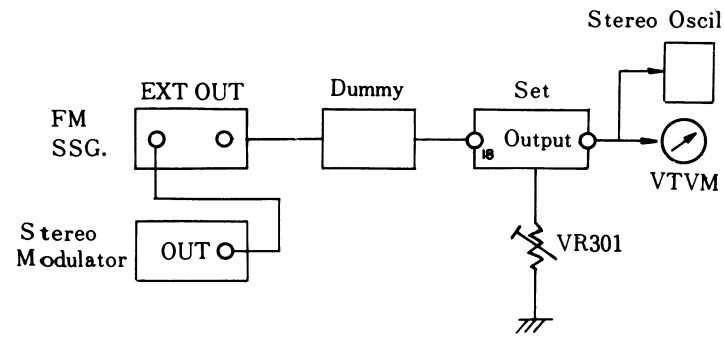


NO.	Frequency	Adjust for	Adjustment
1	98.1MHz	Minimum T.H.D.	T202

NOTE: At this time, the DC voltage between test point Ⓜ and Ⓝ should be realigned by T201 to keep on 0 voltage, because the "S" curve may be detuned.

(Using Frequency Counter, adjust it's point until indicating 98.1MHz exactly.)

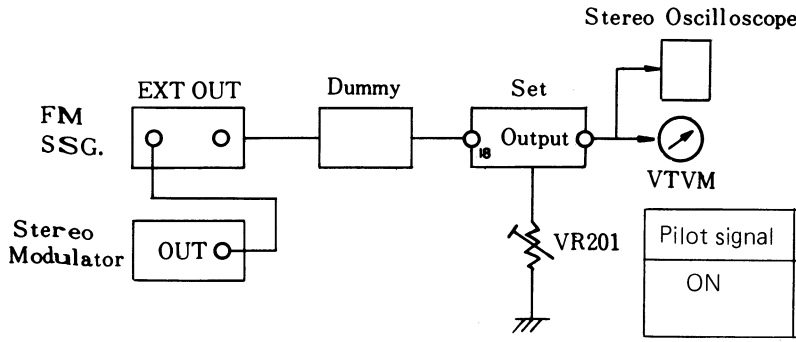
FM MPX ADJUSTMENT – SEPARATION



Pilot Signal	Adjust for	Adjustment
ON	Difference of R and L must be maximum	VR301

NOTE: In case of adjusting the stereo separation, if input is L(or R) channel, R (or L) channel must be maximum.

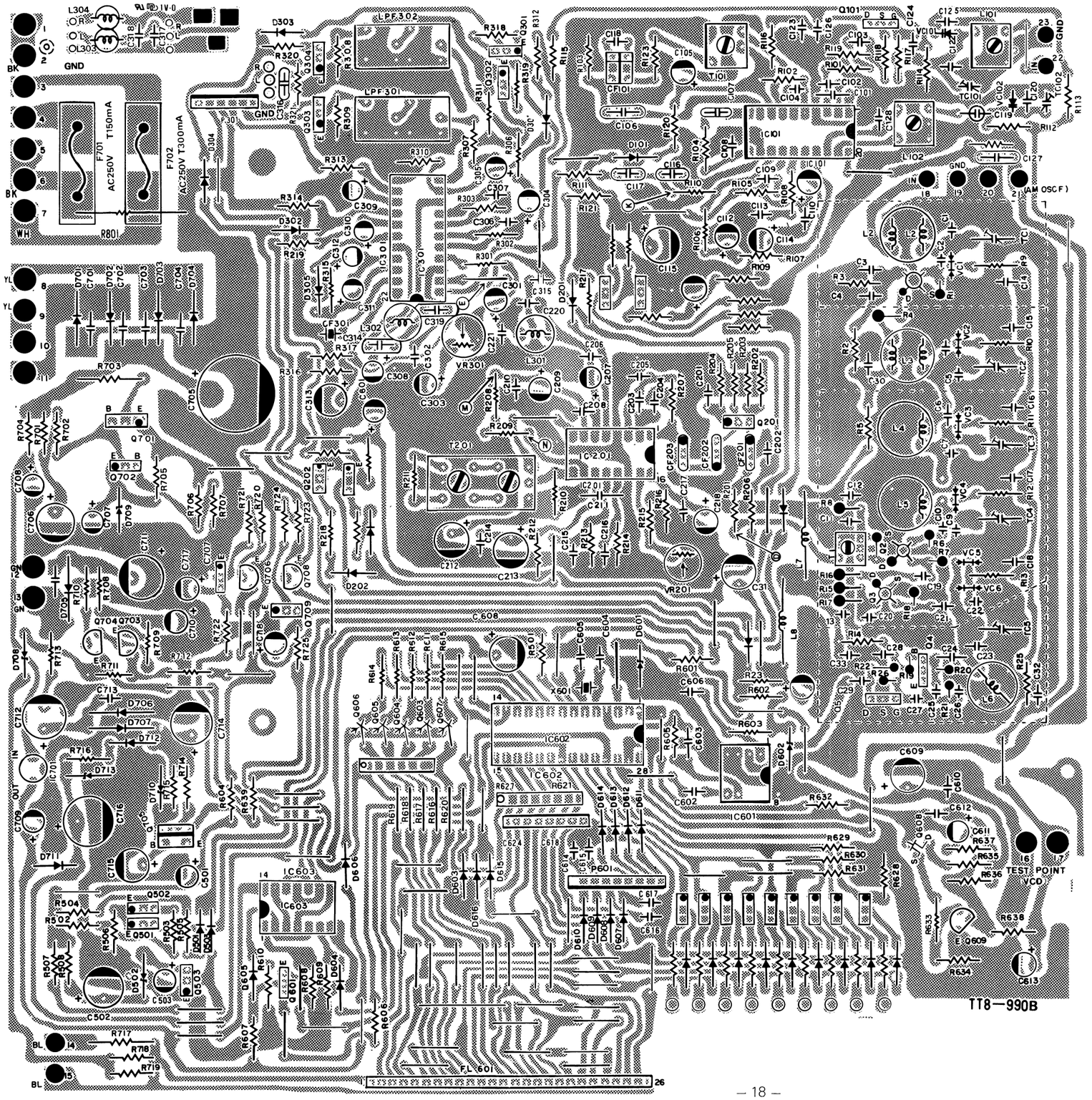
FM STEREO BEACON SENSITIVITY ADJUSTMENT



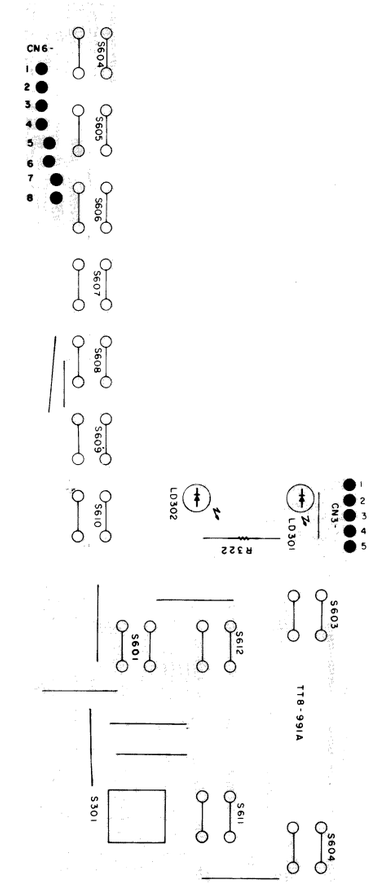
Pilot signal	Input of pin18	Adjust for	Adjustment
ON	5μV	ST LED lamp -ON	VR201

P.C. BOARD ASSEMBLY (COMPONENTS SIDE)

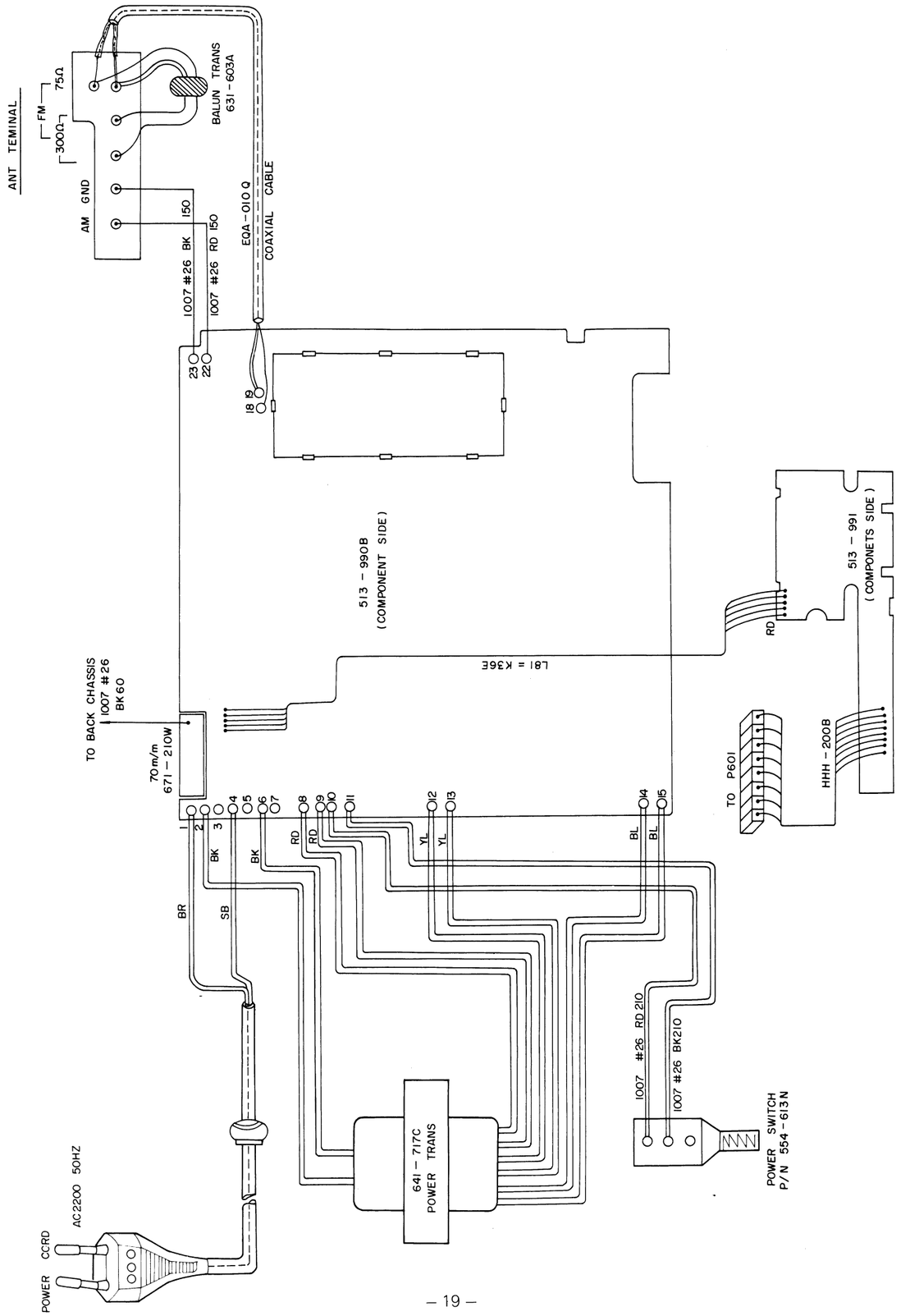
MAIN P. C. BOARD



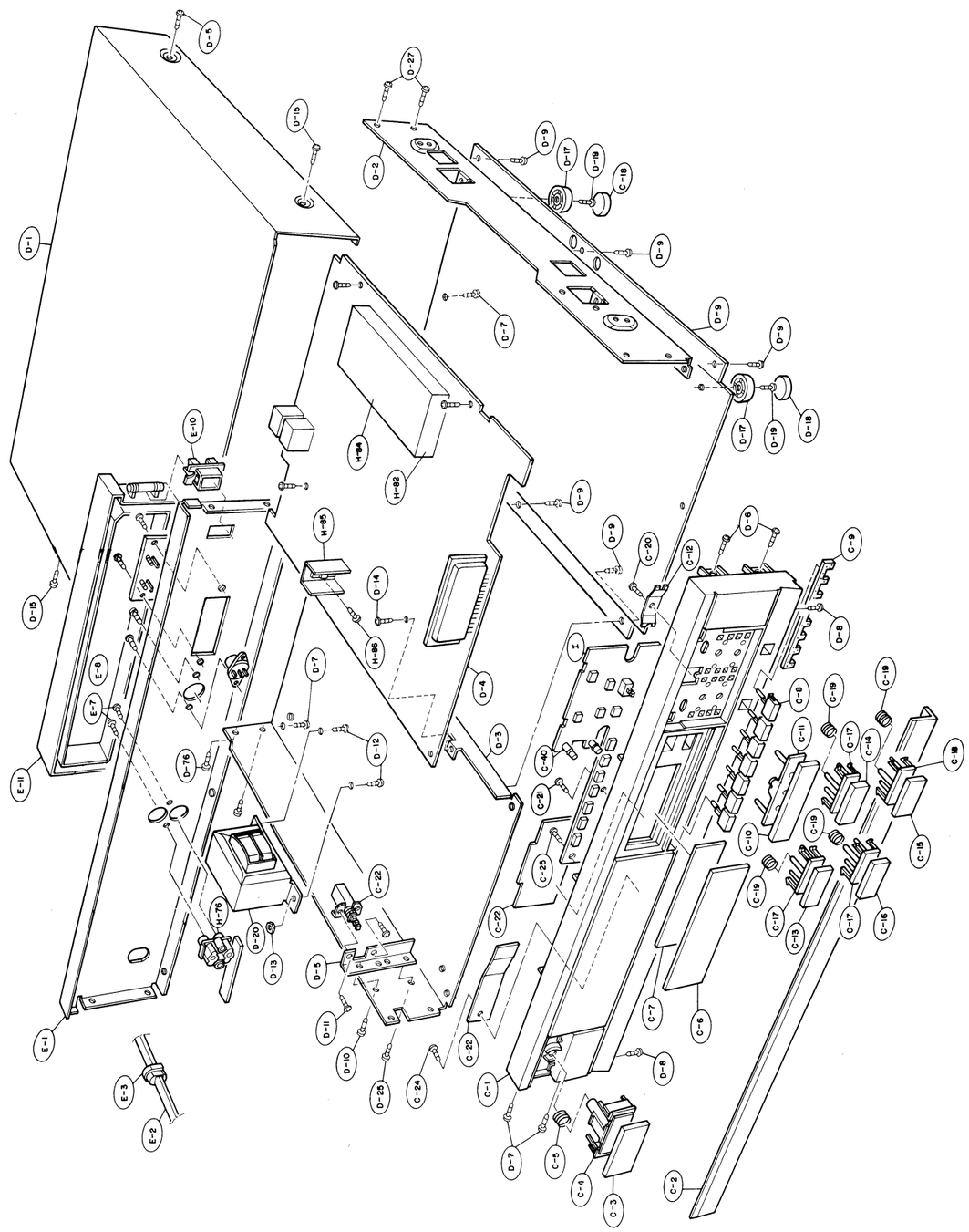
SWITCH P. C. BOARD



WIRING DIAGRAM



EXPLODED VIEW



ELECTRICAL PARTS LIST

CAUTION: A ⚠ in the schematic diagram and the parts list designates components which have special characteristics important to safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2 in this manual. Do not harm the safety of the receiver through improper servicing

Ref. No.	Mfr's Part No.	Description
INTEGRATED CIRCUITS		
IC101	668-093A	IC, LA1245 (AM IF)
IC201	668-650A	IC, LA1235 (FM IF)
IC301	668-301A	IC, LA3400 (FM MPX)
IC601	668-097A	IC, PUB553AC (Prescalar)
IC602	668-096A	IC, UPD1703C-016 (FM Synth)
IC603	668-046A	IC, MC14011BCP (Nand Gate)
IC701	668-044A	IC, UPC78L05 (Regulator)
FETS AND TRANSISTORS		
Q1	667-014A	FET, 3SK74L
Q2	667-014A	FET, 3SK74L
Q3	667-014A	FET, 3SK74L
Q4	665-819B	TR, KTC1923-O
Q5	667-009A	FET, KTK161-Y
Q101	667-009A	FET, KTK161-Y
Q201	665-820B	TR, KTC380TM-O
Q202	665-812B	TR, KTC1815-Y
Q301	665-813B	TR, KTA1015-Y
Q302	665-812B	TR, KTC1815-Y
Q303	665-812B	TR, KTC1815-Y
Q304	665-812B	TR, KTC1815-Y
Q501	665-812B	TR, KTC1815-Y
Q502	665-812B	TR, KTC1815-Y
Q503	665-812B	TR, KTC1815-Y
Q601	665-812B	TR, KTC1815-Y
Q603	665-813B	TR, KTA1015-Y
Q604	665-813B	TR, KTA1015-Y
Q605	665-813B	TR, KTA1015-Y
Q606	665-813B	TR, KTA1015-Y
Q607	665-813B	TR, KTA1015-Y
Q608	667-010C	FET, KTK30A-Y
Q609	665-817A	TR, KTC2240GR
Q701	665-708A	TR, KTD526-O
Q702	665-817A	TR, KTC2240 GR
Q703	665-833C	TR, KTA817A-O
Q704	665-833C	TR, KTA817A-O
Q705	665-708A	TR, KTD526-O
Q706	665-600A	TR, 2SB764-E
Q707	665-812B	TR, KTC1815-Y
Q708	665-600A	TR, 2SB764-E
Q709	665-812B	TR, KTC1815-Y
DIODES		
D101	652-605B	Diode, Switch 1S2472
D201	652-605B	Diode, Switch 1S2472
D202	652-605B	Diode, Switch 1S2472
D301-305	652-605B	Diode, Switch 1S2472
D501	652-605B	Diode, Switch 1S2472
D502	654-612B	Diode, Zener ZPD10
D503	652-605B	Diode, Switch 1S2472
D601	654-608C	Diode Zener ZPD5.1
D602	654-608C	Diode, Zener ZPD5.1
D603-616	652-605B	Diode, Switch 1S2472
D701-704	652-005C	Diode, Rect DS4001
D705-707	652-005D	Diode, Rect DS4002
D708	654-608G	Diode, Zener ZPD3
D709	654-608F	Diode, Zener ZPD6.2
D710	654-615F	Diode, Zener ZPY30
D711	652-605B	Diode, Switch 1S2472
D712	652-605B	Diode, Switch 1S2472
D713	654-608D	Diode, Zener ZPD5.6
LD301	653-636A	LED, SLR54URC3G RD
LD302	653-636D	LED, SLR54GC3-H
VC1-6	654-419A	Diode, Varactor ISV55
VC101	654-420A	Diode, Varactor SVC333A
VC102	654-420A	Diode, Varactor SVC333A
COILS AND TRANSFORMERS		
L2	635-607V	Coil, FM RF
L3	635-607S	Coil FM RF
L4	635-607U	Coil, FM RF
L5	635-607U	Coil, FM RF
L6	635-607T	Coil FM RF
L7	636-602B	Coil Choke
L8	636-602B	Coil Choke
L101	631-606B	Trans, AM RF 250μH
L102	634-602Q	Coil, AM OSC
L301	637-601D	Coil, Peaking 20.8mH
L302	637-601E	Coil, Peaking 7.8mH

Ref. No.	Mfr's Part No.	Description
L303	637-604A	Inductor Fixed 2 core 47μH
L304	637-604A	Industor Fixed 2 core 47μH
L305	637-601D	Coil, Peaking 20.8mH
T1	644-610B	Coil, FM IFT
T101	644-601B	Coil AM IFT
T201	647-606A	Disc Q228CEL-1077B
T202	647-606A	Disc Q228CEL-1077B
MISCELLANEOUS PARTS		
S301	554-633A	SW, SEA12A, 2P(S) Self-Lock
S601-602	558-026A	SW, Tack KPT-1105 (T-S-06)
CF101	616-002E	Filter, Ceramic SFZ450F3L
CF201	616-010B	Filter, SFE10.7MS3GH RD
CF202	616-010B	Filter SFE10.7MS3GH RD
CF203	616-010B	Filter SFE10.7MS3GH RD
LPF301	639-606A	Low Pass Filter
LPF302	639-606A	Low Pass Filter
TC1-4	623-025A	Trimmer CTY121B273
TC5	623-026A	Trimmer ECV-1ZW10x31
TC101	623-001A	Trimmer Ceramic TZ03T110F

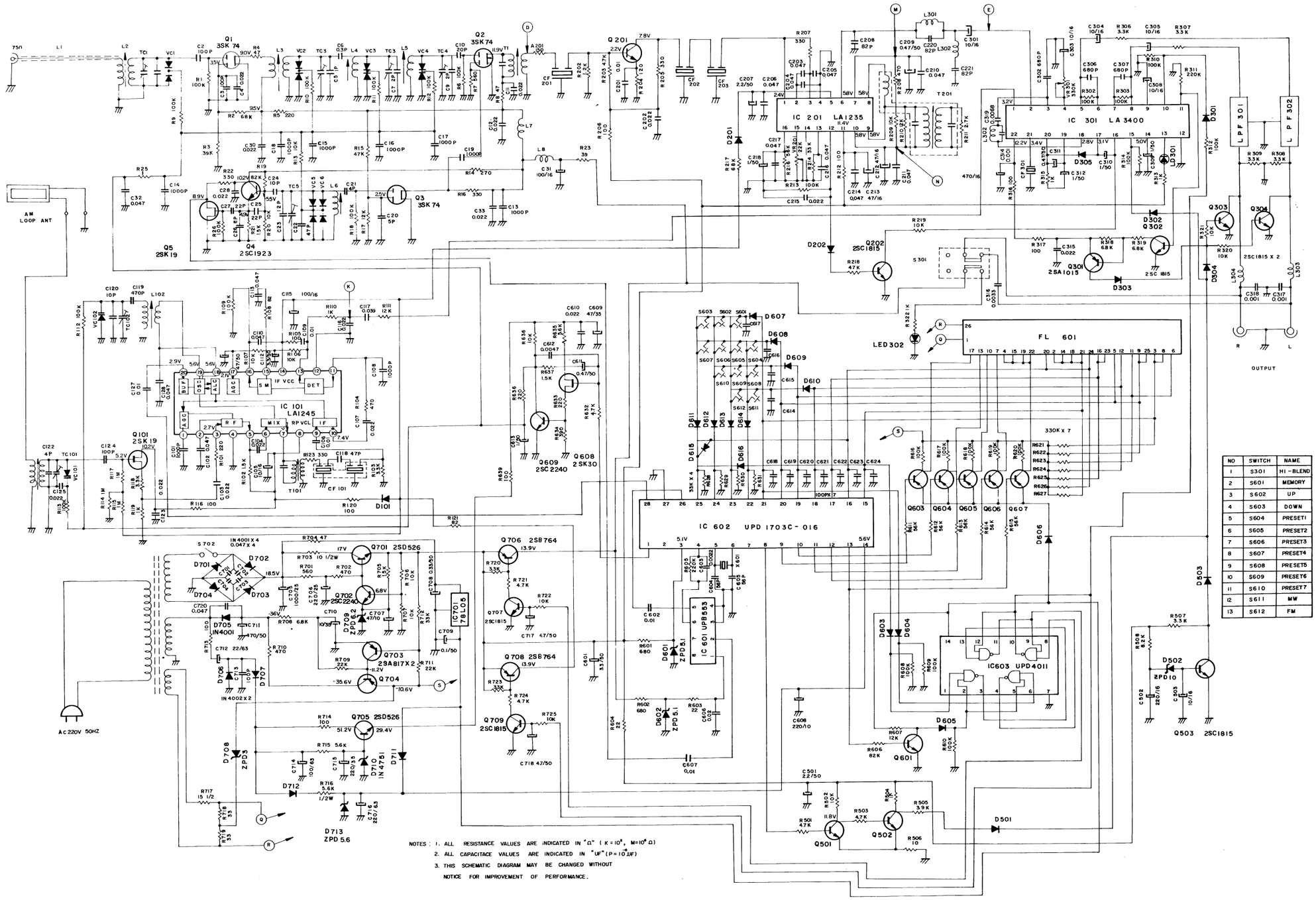
Ref. No.	Mfr's Part No.	Description
TC102	623-001C	Trimmer Ceramic TZ03R200F
VR201	613-002D	VR, Semi. Fixed SR19R-22KB
VR301	613-002H	VR, Semi-Fixed SR19R-330KB
X601	617-601D	Crystal 4.5000MAX
FL601	659-021A	Digitron F1P7DB
JACk 1	576-002B	Jack Block S-436P
	691N069A	Ceramic Pillar (For R703)
R616-620	614-013C	R, Network 100Kx5 RKC1/ 8B5100KJ
R621-627	614-013D	R, Network 330Kx7 RKC1/ 8B7330KJ
R703	RD100J03	R, Carbon Film 10Ω 1/2WP
R716	RS562J01	R, Metal Oxide 5.6F 1/2WP
R717	RD150J03	R, Carbon Film 15Ω 1/2WP
C618-624	614-014A	C, Network 100PF-7
C21	CC040D17	C, Ceramic 4PF 50V
C22	CC470J17	C, Ceramic CC 47PF 50V
C23	CC120J16	C, Ceramic CC 12PF 50V
C24	CC100D17	C, Ceramic CC 10PF 50V
C26	CC080D17	C, Ceramic 8PF 50V

MECHANICAL PARTS LIST

Ref. No.	Mfr's Part No.	Description
C-1	258-522A	Panel Front
C-2	246-510B	Deco Front (With Inlet-Gold Star)
C-3	273-800A	Knob, Power
C-4	324-331A	Holder, Power-Knob
C-5	442-634X	Spring Power Knob
C-6	236-521A	Window Display
C-7	236-522A	Window Inner
C-8	273-516A	Knob Preset
C-9	442-520B	Spring Knob Preset
C-10	273-510C	Knob Deco
C-11	324-513A	Holder Knob-Tuning
C-12	442-521A	Spring Knob Tuning
C-13	273-511H	Knob Deco FM
C-14	273-511I	Knob Deco AM
C-15	273-511J	Knob Deco Hi-Blend
C-16	273-511K	Knob Deco Memory
C-17	324-510A	Holder Knob (A)
C-18	324-511A	Holder Knob(B)
C-19	442-634G	Spring Knob
C-20	353-025F	Screw, Special (Fix Tuning Knob)
C-21	353-025G	Screw, Special (Fix Preset SW PWB)
C-22	236-523A	Window Display Filter
C-23	442-937A	Spring Supporter Digit
C-24	353-025F	Screw Special
C-25	TRQ0936J	Screw (Fix Preset SW PWB)
D-1	213-520A	Cabinet
D-2	315-510B	Frame Side
D-3	313-510C	Chassis Bottom
D-4	256-520B	Plate Bottom
D-5	321-410A	BKT Power SW
D-6	TRQ1830J	Screw, TRQ2+3x6A (Front + Frame Side)
D-7	TRQ1830J	Screw, TRQ2+3x6A (Front + Chassis Botton)
D-8	TCQ1830J	Screw, Tappig TC3+3x6 Fzmy (Front + Chassis Bottom)
D-9	TRQ1830J	Screw, TRQ2+3x6A (Plate Bottom + Chassis Frame Plate Bottom)
D-10	TRQ1830J	Screw, TRQ2+3x6A
D-11	MRC1830J	Screw (Fix Power S/W)
D-12	MRC1836J	Screw, MRC+3x8 (Fix Power Trans)
D-13	NHA1800J	Nut, NH1-3 Fzmy (Fix Power Trans)
D-14	TRQ1830J	Screw, TRQ2+3x6A (Fix Main PWB)
D-15	353-633A	Screw, Special (Fix cabinet-side)
D-17	265-024A	Foot (Mould Only)
D-18	472-610B	Felt (Under Foot)
D-19	TRQ1830J	Screw, TRQ2+3x6A (Fix Foot)
D-20 ⚠	641-717C	Trans Power (T701)
D-22	554-613W	SW, SUF12-S Lead Type (S2, For Power)
D-25	TRQ1822J	Screw, TRQ2+3x4A (Fix Bracket Power SW)
D-26	TBQ1830J	Screw, TBQ+3x6 Fzmy (Chassis Bottom + Panel Back)
D-27	TBQ1830J	Screw, TBQ+3x6 Fzmy (Frame Side+Panel Back)
D-29	TRQ1830J	Screw, TRQ2+3x6A (Back+Frame Side+Bottm)
E-1	258-511D	Panel Back
E-2	681-003D	Power Cord
E-3	324-348A	Holder, Cord
E-4	573-002A	Socket, Ant TCP9105-01-010
E-5	NHA1800J	Nut, NH1-3 FZMY
E-6	MRC1830I	Screw, MRC+3x6 FBK (Fix Socket Ant)
E-7	TRQ1839I	Screw, TRQ253x10A FBK (Fix RCA Jack)
E-8	563-016A	Screw, Terminal Ay (2P)
E-9	TRQ1836I	Screw, TRQ2+3x8A FBK (Fix Ant Terminal)
E-10	324-515A	Holder AM Ant
H-76	576-002B	Jack Block S-436P (Jack1, For Output)
H-82	256-449A	Plate, Shield-A
H-83	256-451A	Plate, Shield-C
H-84	221-193A	Cover-A Shield Plate
H-85	255-039A	Plate, Heat Sink (For Q701)
H-86	TRQ1836J	Screw, TRQ2+3x8A (For Q701)
H-87	256-503A	Shield Plate
H	511-990B	PWB Ay Main
I	511-991A	PWB Ay Switch
	632-210A	Coil Ant Loop AM 200X50mm
	564-017E	Cord Phono 700m/m

NOTES

SCHEMATIC DIAGRAM



NO	SWITCH	NAME
1	S301	HI-BLEND
2	S601	MEMORY
3	S602	UP
4	S603	DOWN
5	S604	PRESET1
6	S605	PRESET2
7	S606	PRESET3
8	S607	PRESET4
9	S608	PRESET5
10	S609	PRESET6
11	S610	PRESET7
12	S611	MW
13	S612	FM

NOTES : 1. ALL RESISTANCE VALUES ARE INDICATED IN "Ω" (K=10³, M=10⁶ Ω)
2. ALL CAPACITACE VALUES ARE INDICATED IN "UF"(P=10⁻⁶UF)
3. THIS SCHEMATIC DIAGRAM MAY BE CHANGED WITHOUT NOTICE FOR IMPROVEMENT OF PERFORMANCE.

STEREO DOUBLE CASSETTE DECK

MODEL: GSW-5200

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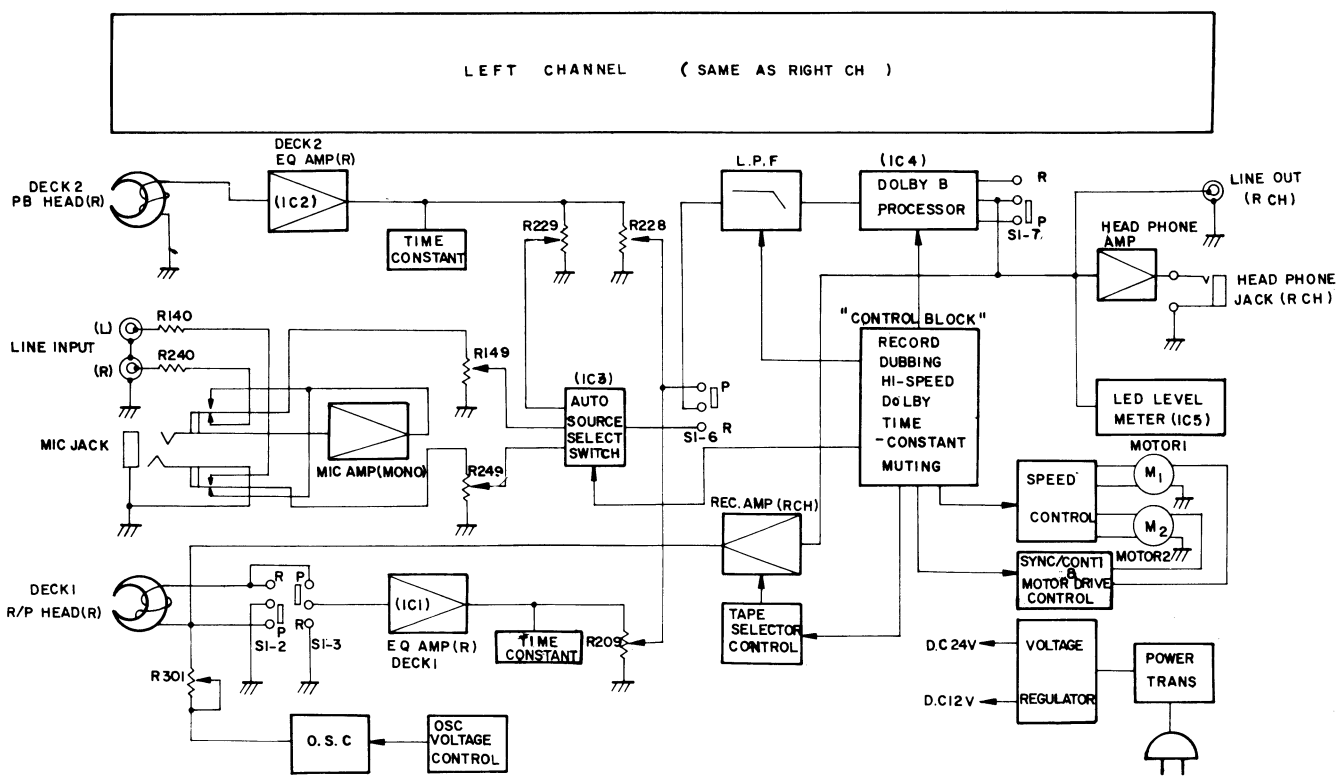
MECHANICAL PARTS LIST 39

SCHEMATIC DIAGRAM 41

SPECIFICATIONS

Tape Speed	4.75cm/sec
Wow Flutter (JIS – WTD)	0.1%
F.F. & Rewind Time (C-60)	120sec
Frequency Response	30–15kHz
S/N Ratio (Dolby off)	P/B: 50dB, R/P: 60dB
T.H.D	P/B 1%, R/P: 1.5%
Cross Talk (MTT-121, W/BPF)	60dB
Channel Separation (1 kHz)	P/B: 35dB, R/P: 35dB
Erase Ratio (W/BPF)	65dB
Output Level	0.5V

BLOCK DIAGRAM

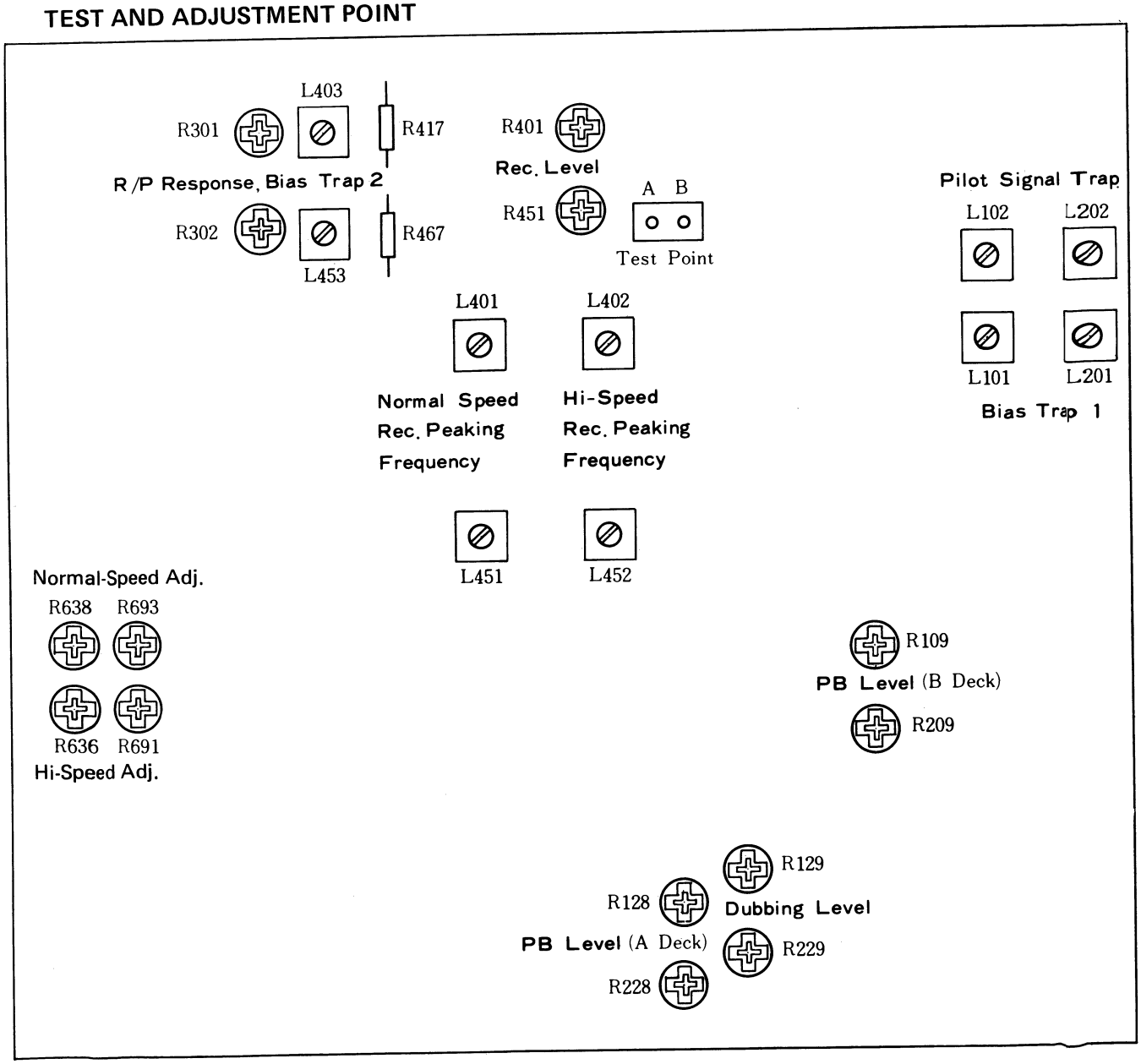


ALIGNMENT INSTRUCTIONS

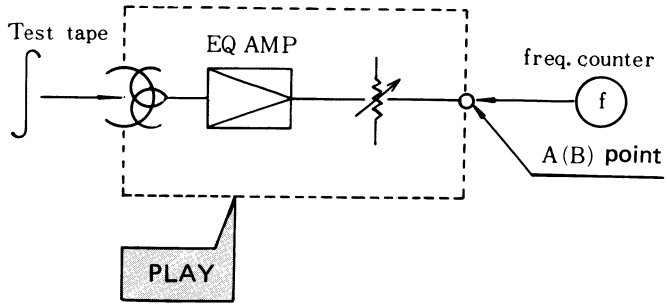
EQUIPMENT NEEDED

1. Audio frequency OSC
2. VTVM
3. Test tape
   a. MTT–114N
   b. MTT–111
   c. MTT–150
   d. MTT–501 (Normal)
   e. CS–26 (CrO_2)
   f. Metalic–4 (Metal)

TEST AND ADJUSTMENT POINT

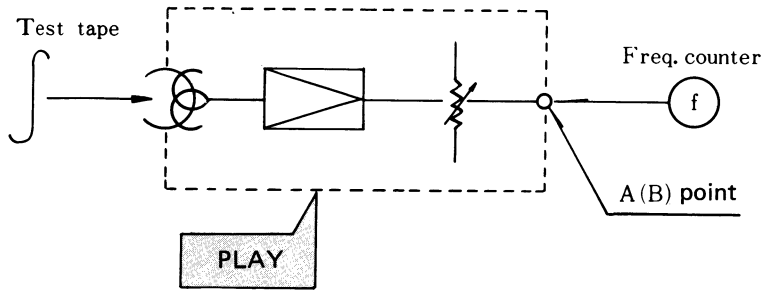


1. AZIMUTH ADJUSTMENT



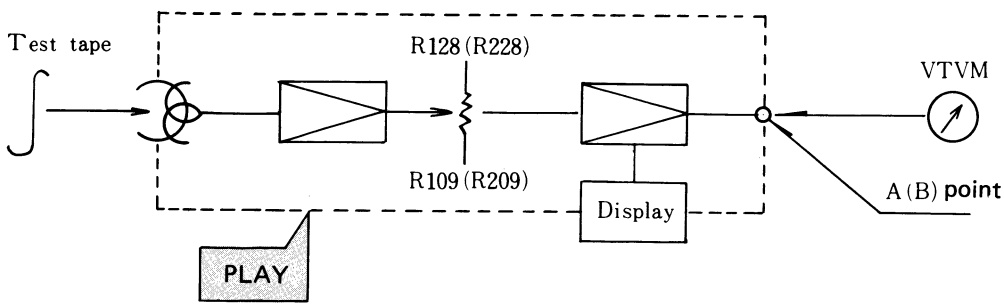
Deck Condition	Test tape	Test point	Adjustment	Adjust for
Play	MTT-114N	A.B point	Head screw	R/L Maximum

2. MOTOR SPEED ADJUSTMENT – Hi speed, Normal speed



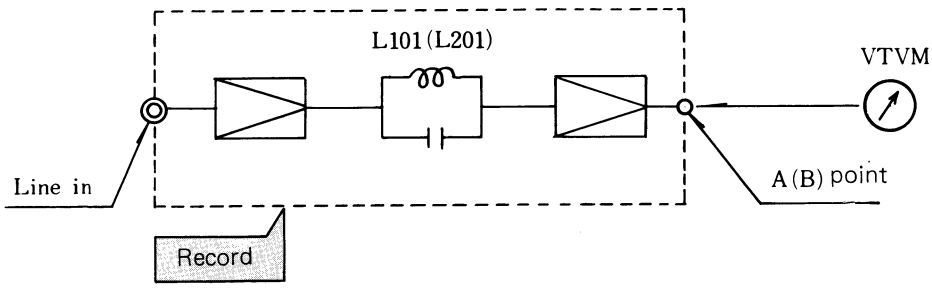
Item	Deck condition	Test tape	Test point	Adjustment	Adjust for	Remark
Hi-speed	Play	MTT-111	A.B. point	Deck A:R636 Deck B:R691	6kHz±60Hz	Earth the base of TR626
Normal-speed	Play	MTT-111	A.B. point	Deck A:R638 Deck B:R693	3kHz±30Hz	After you adjust Hi-speed, adjust normal-speed.

3. PLAY BACK LEVEL ADJUSTMENT



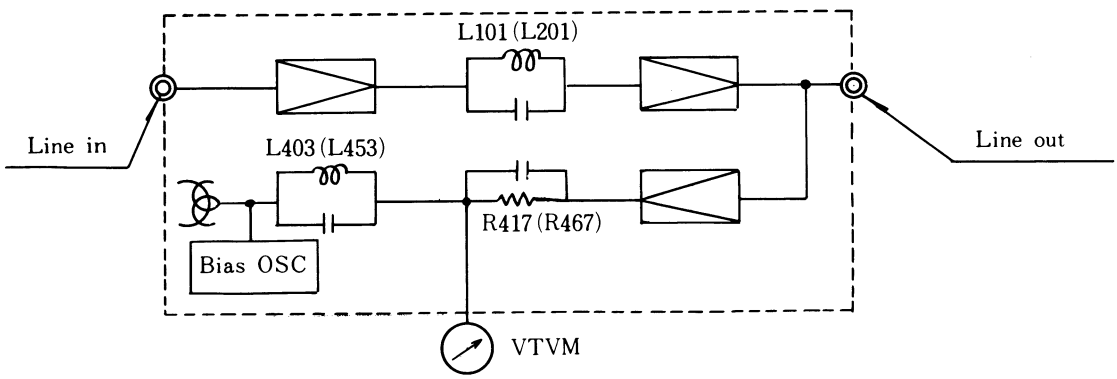
Deck condition	Test tape	Test point	Adjust for	output	Remark
Play	MTT-150	A,B point	Deck A:L-R128, R-228 Deck B:L-R109, R-209	50mV	After you adjust to being associated with Dek A and B, repeat the adjustment several times

4. BIAS TRAP ADJUSTMENT (1)



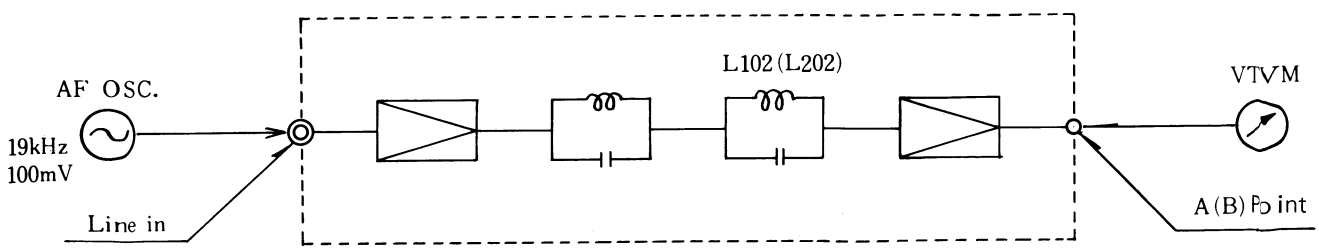
Deck	Deck condition	Test tape	Test point	Adjustment	Adjust for	Remark
Deck A	Stop					Metal function
Deck B	R/P-pause	Blank tape	A,B point	L101, L201	Minimum	

5. BIAS TRAP ADJUSTMENT (2)



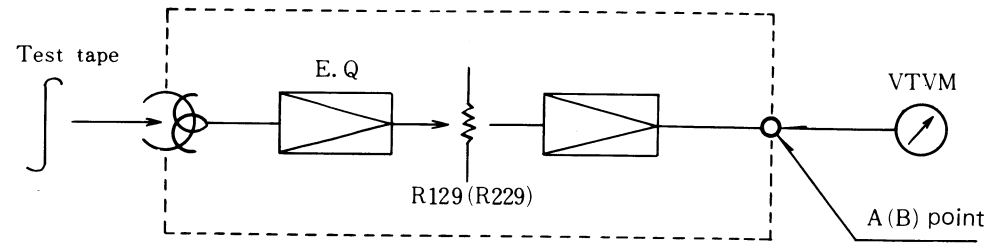
Deck	Deck condition	Test tape	Test point	Adjustment	Adjust for	Remark
Deck A	Stop					Metal Function
Deck B	R/P-pause	Blank tape	R417, R467	L403, L453	Minimum	

6. PILOT SIGNAL TRAP ADJUSTMENT



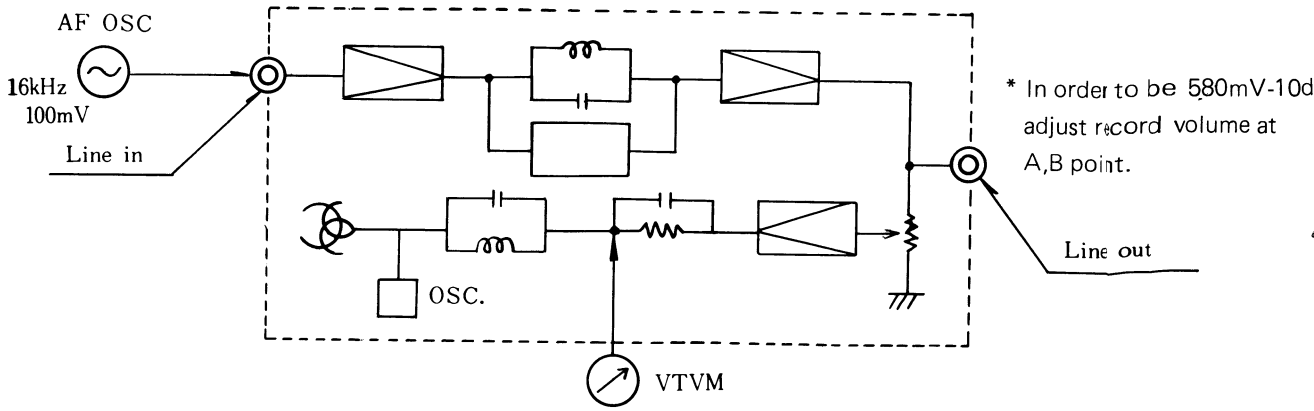
Deck	Deck condition	Test tape	Test point	Adjustment	Input	Adjust for	Remark
Deck A	Stop				19kHz 100mV	Minimum	Dubbing off
Deck B	R/P-pause	Blank tape	A.B point	L102, L202			

7. DUBBING LEVEL ADJUSTMENT



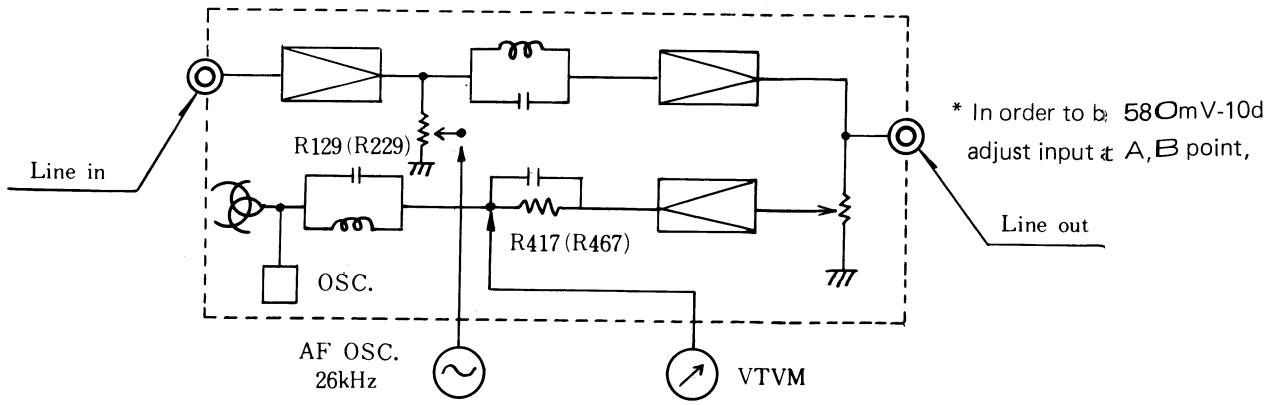
Deck	Deck condition	Test tape	Test point	Adjustment	Output	Adjust for	Remark
Deck A	play	MTT-150	A,B	R129	580mV	±1 dB	Dubbing condition
Deck B	R/P-pause	Blank tape		R229			

8. REC PEAKING FREQUENCY-AT NORMAL SPEED



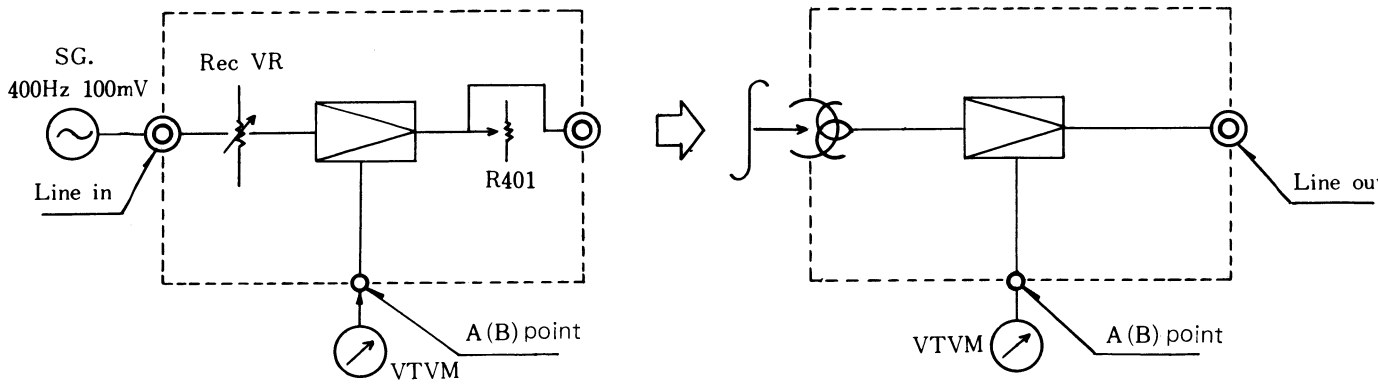
Deck	Deck condition	Test tape	Test point	Adjustment	Input	Adjust for	Remark
Deck A	Stop				16kHz 100mV	Maximum	Dubbing off, Hi-speed off
Deck B	R/P-pause	Blank tape	R417, R467	L401, L451			

9. REC. PEAKING FREQUENCY-AT HI-SPEED



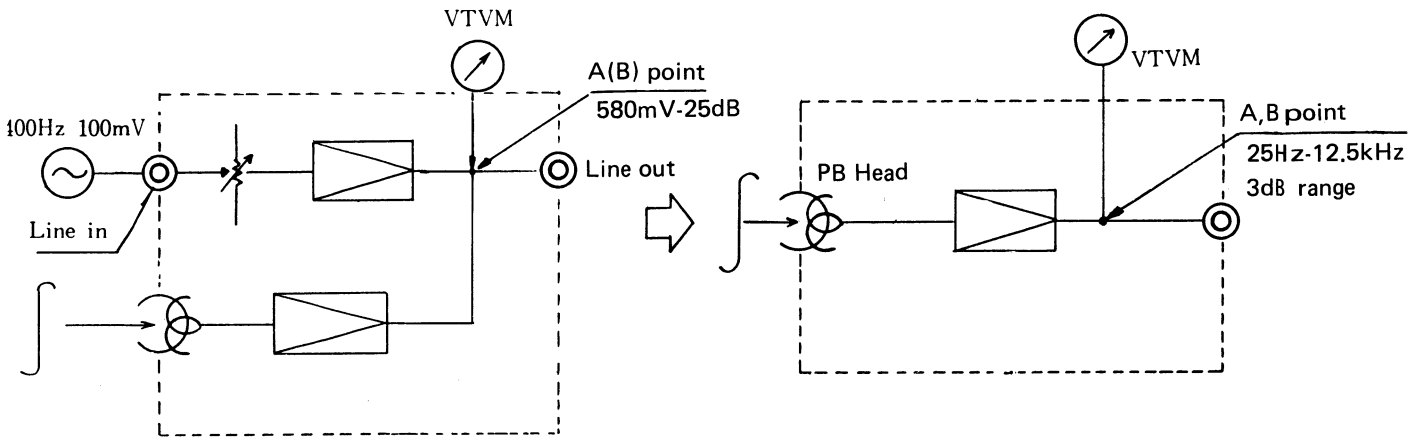
Deck	Deck condition	Test tape	Test point	Adjustment	Input	Adjust for	Remark
Deck A	PB-pause	Blank tape	R407	L402	26kHz, 100mV-10dB. Give the center tap of R129, 229 the input.	Maximum	Dubbing Hi-speed on
Deck B	R/P-pause	Blank tape	R417	L452			

10. REC. LEVEL ADJUSTMENT



Deck	Deck condition	Test tape	Test point	Adjustment	Input	Output	point	Remark
DEck A	Stop			R401	Rec. VR.—Max. A,B point—400Hz, 580mV output.	580mV At PB	±1 dB	Normal speed
Deck B	R/P-PB	MTT-501	A.B point	R451				

11. RECORD PLAY FREQUENCY RESPONSE (BIAS ADJUSTMENT)



Deck	Deck condition	Test tape	Test point	Adjustment	Input	Remark
Deck A	Stop				250Hz-12.5kHz 400Hz. Output: 580mV-25dB	Normal speed
Deck B	R/P-PB	MTT-501 CS-26, Metalic-4	A,B point	R301 R302		

NOTE; Adjust under normal speed, confirm R/P response of Hi-speed, repeat steps 10 and 11 several times at the same time.

STANDARD MAINTENANCE

Tape Head and Capstan Cleaning

Whenever a unit is brought in for service or repair, clean the tape heads, capstan drive shaft and other tape handling surfaces to ensure proper tape handling and optimum frequency response. Use a cotton swab dipped in head cleaner or denatured alcohol to clean all tape handling surfaces. Wipe dry.

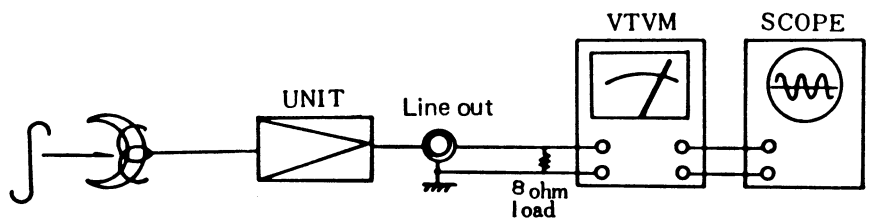
Tape Head Demagnetization

Do not use magnetized tools near the tape heads, since they can magnetize the head. After long period of the heads will retain a small amount of residual magnetism. A magnetized head will result in loss of high frequency response and increased noise. Use a standard tape head demagnetizer and follow the instructions supplied with it to demagnetize the heads.

Azimuth Adjustment

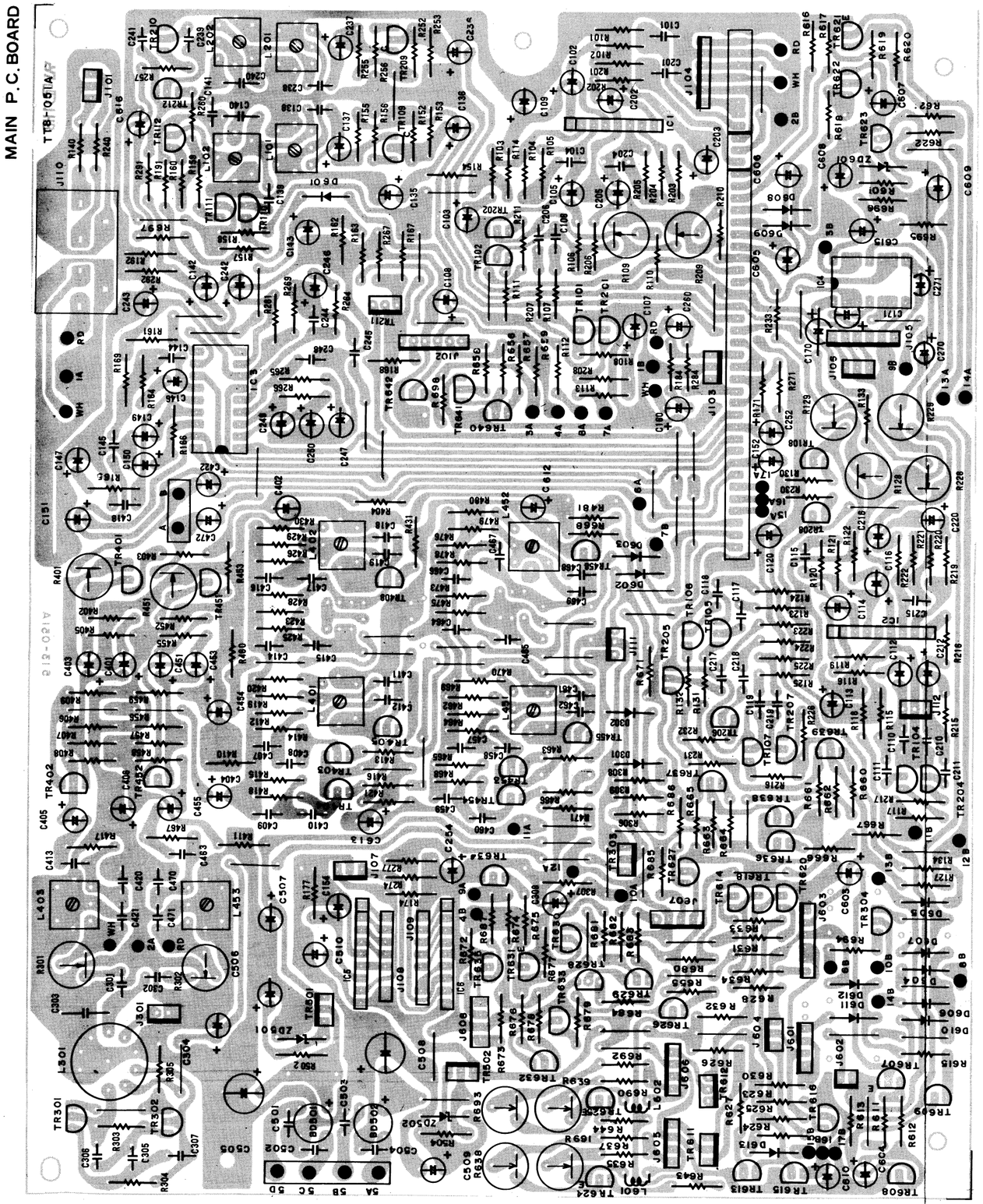
1. Azimuth adjustment is normally required when the head is replaced, or for cases of cross-talk and poor high frequency response. A test tape is required for such adjustment.

2. Connect a scope or VTVM to the right channel Sp out. Insert a test tape into the unit (Use a test tape such as TEAC MTT-114, MTT-115). Adjust the azimuth adjustment screw for maximum output onto the right channel. Use glyptal or other non-hardening cement to lock the azimuth adjustment screw.

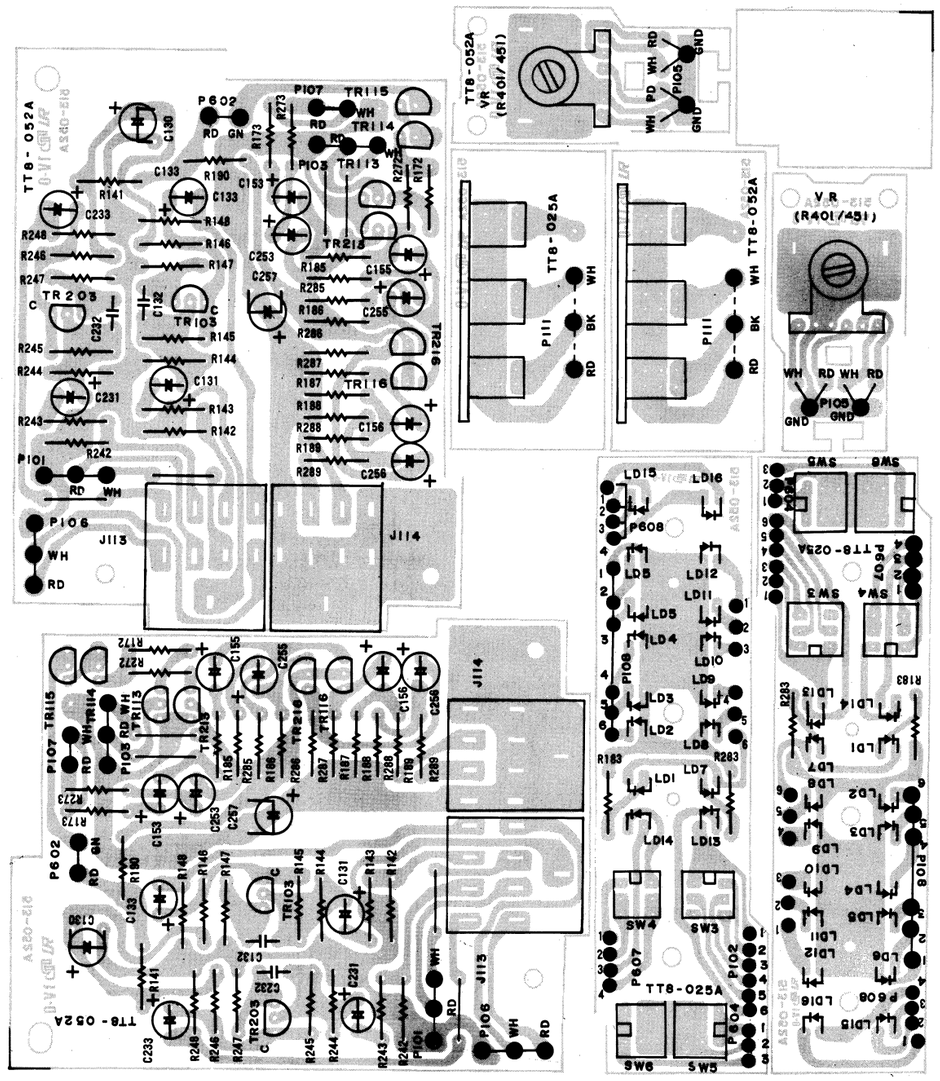


P.C. BOARD ASSEMBLY (COMPONENTS SIDE)

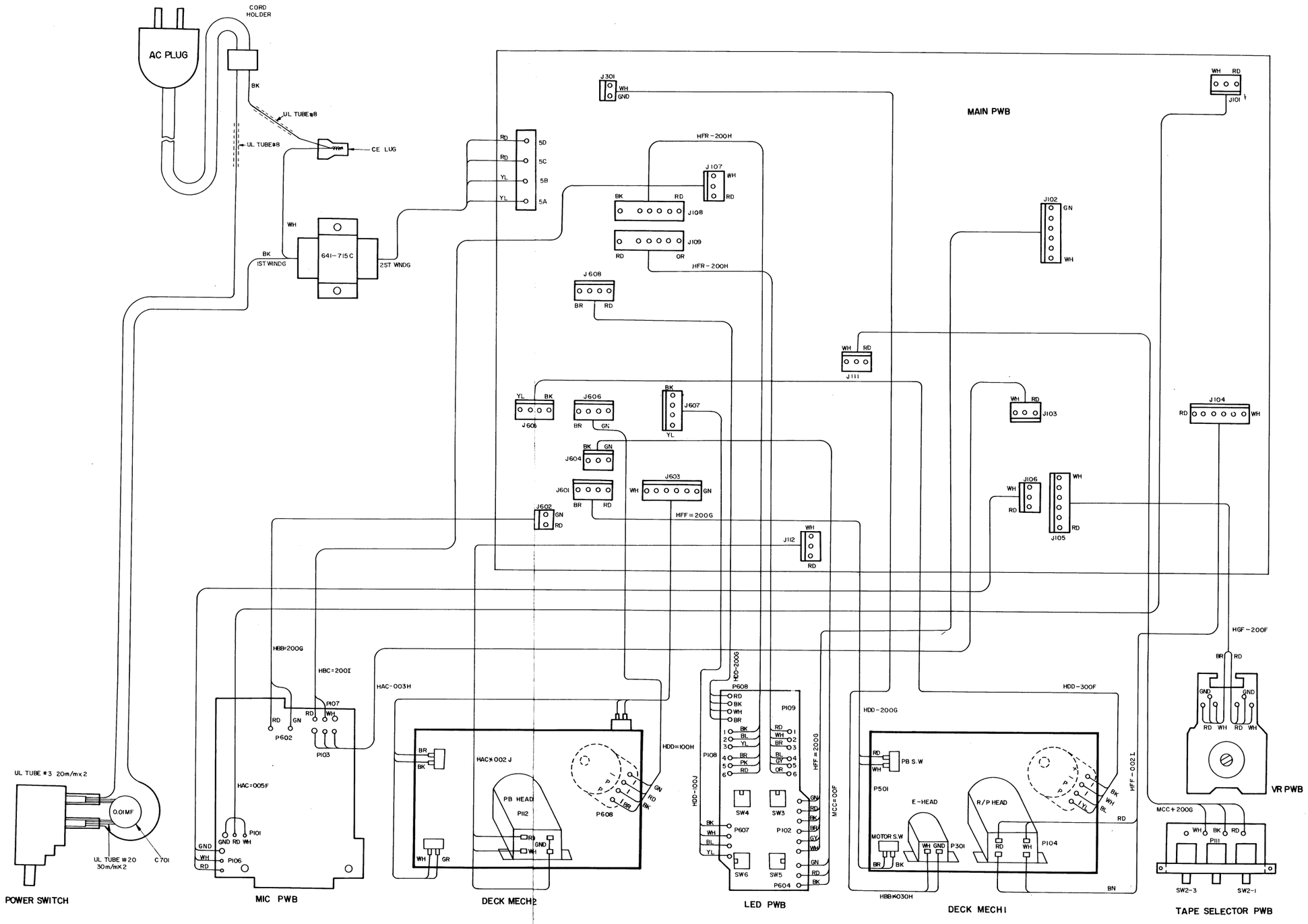
MAIN P.C. BOARD



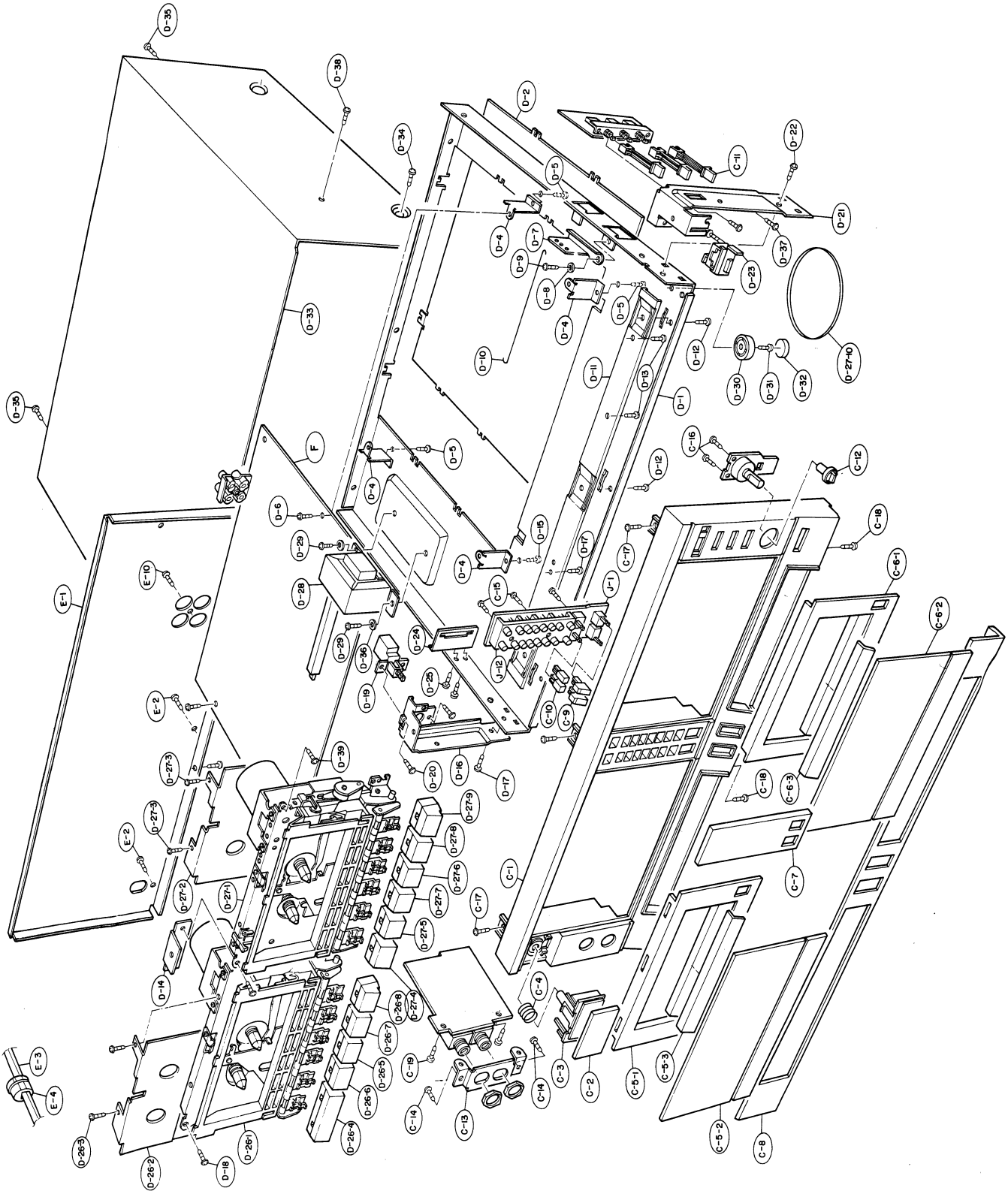
MIC & HEADPHONE P.C.BOARD



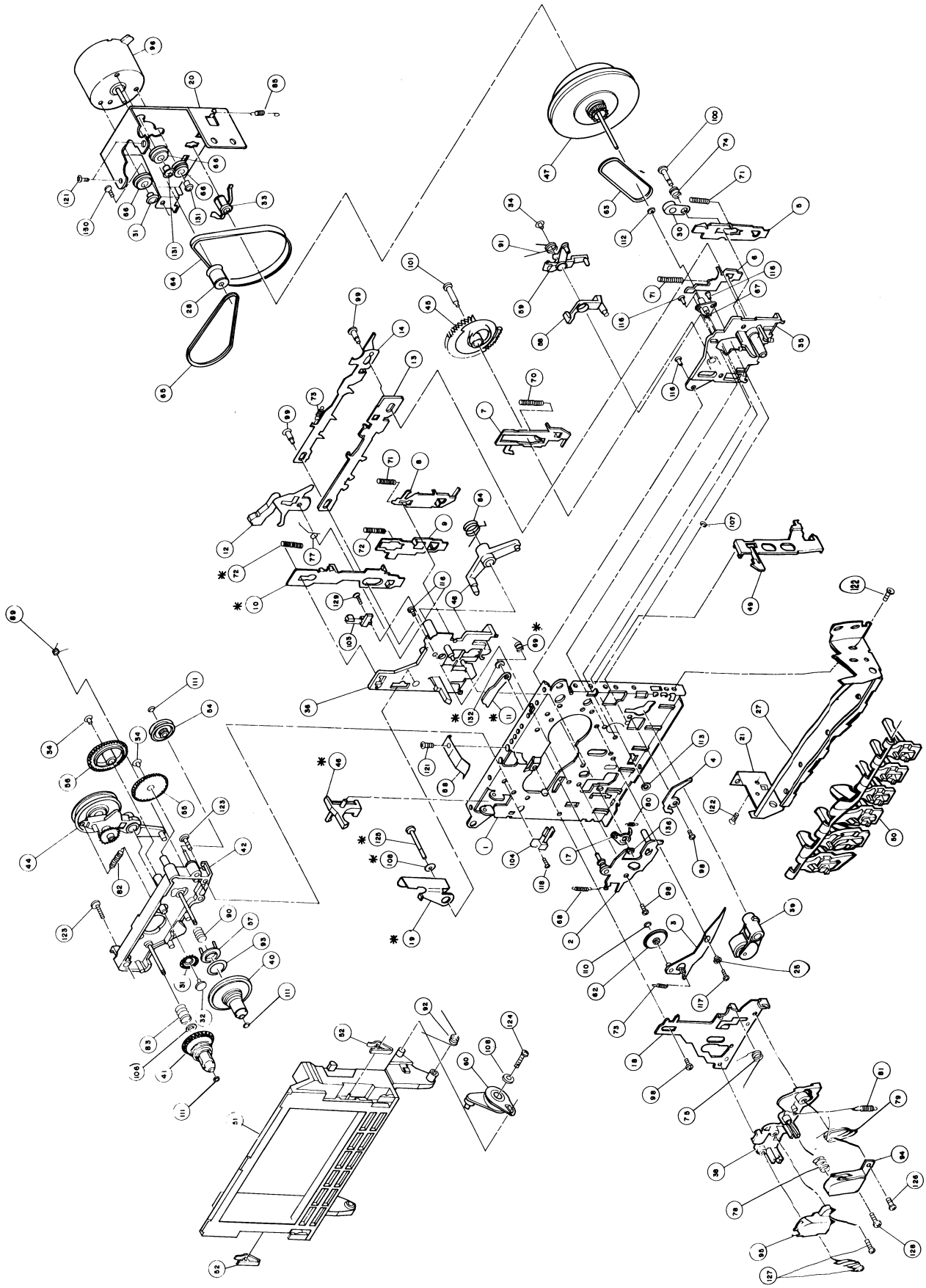
WIRING DIAGRAM



EXPLODED VIEW FOR CABINET



EXPLODED VIEW FOR DECK MECHANISM



ELECTRICAL PARTS LIST

CAUTION: A ⚠ in the schematic diagram and theparts list designates compcnents which have special characteristics important to safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2 in this manual. Do not harm the safety of the receiver through improper servicing

Ref. No.	Mfr's Part No.	Description
INTEGRATED CIRCUITS		
IC1	668-145A	IC, LA3160 (Pre-Amp)
IC2	668-145A	IC, LA3160 (Pre-Amp)
IC3	668-664A	IC, HA12045 (Dolby)
IC4	668-662A	IC, KIA7658P (EQ)
IC5	668-666A	IC, LB1413N (Drive) GN
IC6	668-666A	IC, LB1413N (Drive) GN
TRANSISTORS		
TR101	665-812B	TR, KTC1815-Y
TR102	665-812B	TR, KTC1815-Y
TR103	662-606C	TR, MPS9635C
TR104-108	665-812B	TR, KTC1815-Y
TR109	662-606C	TR, MPS9635C
TR110-116	665-812B	TR, KTC1815-Y
TR201-202	665-812B	TR, KTC1815-Y
TR204-208	665-812B	TR, KTC1815-Y
TR209	662-606C	TR, MPS9635C
TR210	665-812B	TR, KTC1815-Y
TR211	665-708B	TR, KTD526-Y
TR212,213	665-812B	TR, KTC1815-Y
TR216	665-812B	TR, KTC1815-Y
TR301,302	665-881C	TR, KTC2236A-Y
TR303	665-708B	TR, KTD526-Y
TR304	665-812B	TR, KTC1815-Y
TR401	665-812B	TR, KTC1815-Y
TR402	665-816B	TR, KTC732TM-BL
TR403-405	665-812B	TR, KTC1815-Y
TR408	665-812B	TR, KTC1815-Y
TR451	665-812B	TR, KTC1815-Y
TR452	665-816B	TR, KTC732TM-BL
TR453-455	665-812B	TR, KTC1815-Y
TR458	665-812B	TR, KTC1815-Y
TR501,502	665-708B	TR, KTD526-Y
TR607	665-813B	TR, KTA1015-Y
TR608,609	665-812B	TR, KTC1815-Y
TR611-612	665-712A	TR, KTA966A-Y
TR613-616	665-812B	TR, KTC1815-Y
TR618	665-812B	TR, KTC1815-Y
TR620	665-812B	TR, KTC1815-Y
TR621	665-813B	TR, KTA1015-Y
TR622-623	665-812B	TR, KTC1815-Y
TR624,625	665-813B	TR, KTA1015-Y
TR626-630	665-812B	TR, KTC1815-Y
TR631	665-813B	TR, KTA1015-Y
TR632-642	665-812B	TR, KTC1815-Y
DIODES		
D301,302	652-605B	Diode, Switch 1S2472
D601-613	652-605B	Diode, Switch 1S2472
BD501,502	652-013A	Diode, Rect W005M
ZD501	654-607E	Diode, Zener ZPD-24
ZD502	654-607B	Diode, Zener ZPD-13
ZD601	654-607D	Diode, Zener ZPD-18
LD1-4	653-636D	LED, SLR54GC3-H
LD5,6	653-636A	LED, SLR54URC3 RD
LD7-10	653-636D	LED, SLR54GC3-H
LD11-16	653-636A	LED, SLR54URC3-G RD
COILS		
L101, 102	638-601C	Coil, Trap
L201, 202	638-601C	Coil, Trap
L301	634-608C	Coil, Bias Osc Round Type 1.7mH
L401-403	638-601C	Coil, Trap
L451-453	638-601C	Coil, Trap
L601,602	639-003G	Coil, Padding 1mH
VARIABLE RESISTORS		
R109	613-002G	VR, Semi-Fixed SR19R-47KB, 10D
R209	613-002G	VR, Semi-Fixed SR19R-47KB, 10D
R128	613-002G	VR, Semi-Fixed SR19R-47KB, 10D.
R129	613-002G	VR, Semi-Fixed SR19R-47KB 10D
R149	611-640A	VR, K162T00-100KAx2 (L=25)
R228	613-002G	VR, Semi-Fixed SR19R-47KB 10D
R229	613-002G	VR, Semi-Fixed SR19R-47KB 10D

Ref. No.	Mfr's Part No.	Description
R249	611-640A	VR, K162T00-100KAx2 (L=25)
R301	613-002E	VR, Semi-Fixed SR19R-150KB 10D
R302	513-002E	VR, Semi-Fixed SR19R-150KB 10D
R401	613-002G	VR, Semi-Fixed SR19R-47KB 10D
R451	613-002G	VR, Semi-Fixed SR19R-47KB 10D
R636	613-002F	VR, Semi-Fixed SR19R-10KB 10D
R638	613-002C	VR, Semi-Fixed SR19R-4.7KB 10D
R691	613-002F	VR, Semi-Fixed SR19R-10KB 10D
R693	613-002C	VR, Semi-Fixed SR19R-4.7KB 10D
MISCELLANEOUS PARTS		
S1	552-608A	SW, Slide CL114K Shorting
SW2	554-636A	SW, Push SUY31A Inter-Lock
S3-6	554-635A	SW, Push SPH121A Self-Lock
	572-059A	Jack, MIC
	572-059B	Jack, Headphone
	576-002A	Jack, Block 5-437P

MECHANICAL PARTS LIST

Cabinet

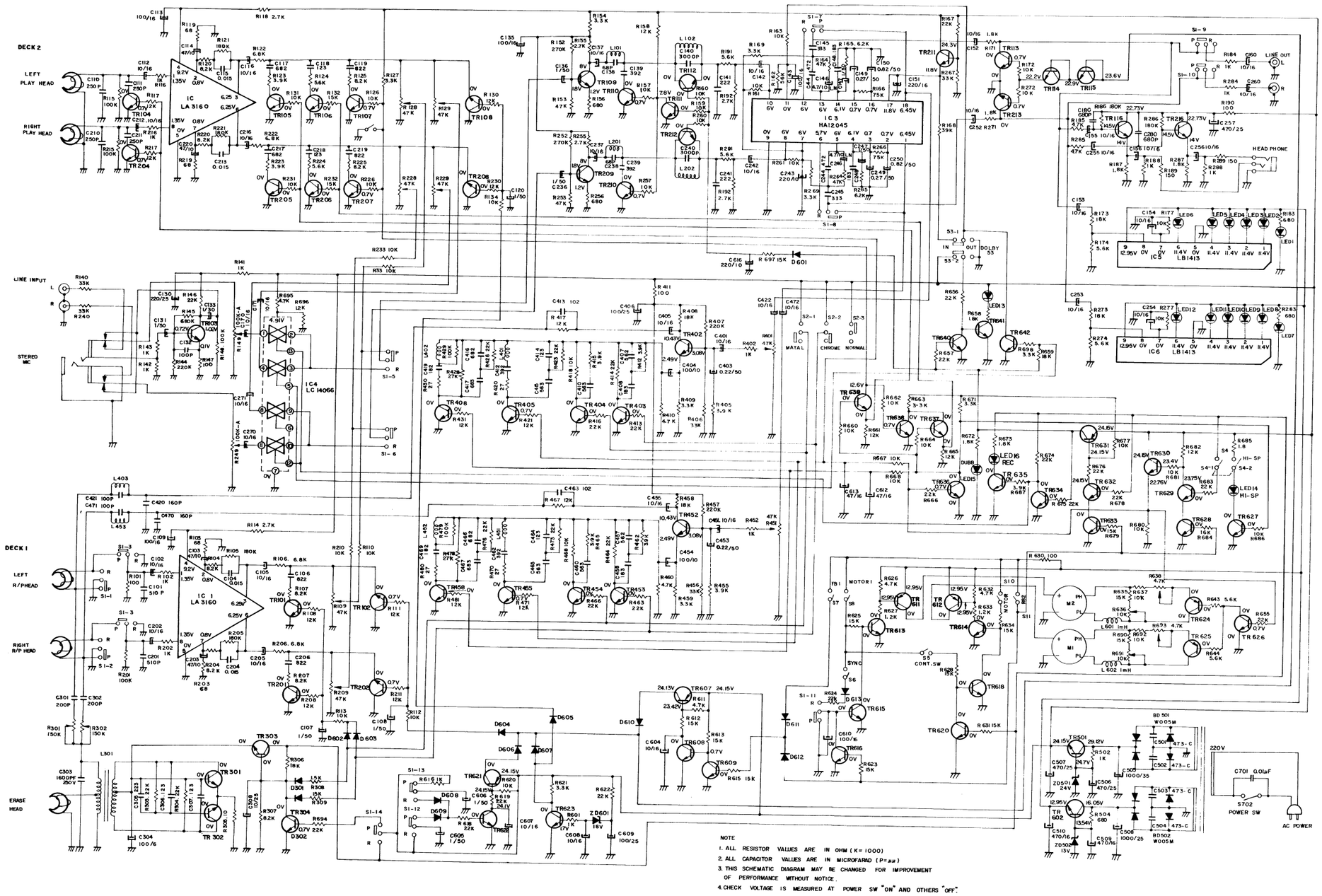
Ref. No.	Mfr's Part No.	Description
C-1	258-010A	Panel, Front
C-2	273-800A	Knob, Power
C-3	324-331A	Holder, Power-Knob
C-4	442-634U	Spring, Knob (For Power Knob)
C-5	236-193A	Window Ay, CST-Door (Left)
C5-1	324-300A	Holder, CST-Window
C-5-2	236-025A	Window CST-Door-L(A)
C-5-3	246-330B	Deco, CST-Door-L(A)
C-6	236-193B	Window Ay CST-Door (Right)
C-6-1	324-300A	Holder, CST-Window
C-6-2	236-025B	Window, CST-Door-R(B)
C-6-3	246-330C	Deco, CST-Door-R(B)
C-7	236-026A	Window, Led
C-8	251-300A	Plate, AL-Dec
C-9	273-803A	Knob, Syncro
C-10	273-804A	Knob, Dolby
C-11	273-805A	Knob, Tape-Select
C-12	273-513D	Knob Rotary
C-13	321-900A	Bracket, Jack
C-14	353-025F	Screw, Special (For Jack-Bracket + Front Pannel)
C-15	TRQ1846J	Screw TRQ2+3x20A (For LED PWB + Front Pannel)
C-16	353-025F	Screw Special (For Rec-Level PWB)
C-17	TCQ1830J	Screw, Tapping TC3+3x6 FZMY (For Front Pannel Fix,Up)
C-18	TCQ1836J	Screw, TCQ+3x8 Fzmy (For Front Pannel Fix, Down)
C-19	TRQ1830J	Screw, TRQ2+3x6A (For Jack Bracket + PWB)
D-1	313-502A	Chassis Bottom
D-2	256-220A	Plate, Bottom
D-3	TRQ1836J	Screw, TRQ2+3x8A (For Bottom Plate)
D-4	321-901A	Bracket, PWB
D-5	TRQ1836J	Screw, TRQ2+3x8A (For PWB Bracket)
D-6	TRQ1836J	Screw, TRQ2+3x8A (For Main PWB + Bracket)
D-7	333-300A	Lever, REC
D-8	341-020A	Bushing, Lever
D-9	TRQ1836J	Screw, TRQ2+3x8A (For Rec-Lever Fix)
D-10	442-620B	Spring REC
D-11	321-421A	Bracket-A, Deck
D-12	TCQ1830J	Screw, Tapping TC3+3x6 Fzmy (For Bottom + Bracket A)
D-13	353-022B	Screw (For Bracket A + Deck)
D-14	321-902A	Bracket-B, Deck
D-15	TRQ1836J	Screw, TRQ2+3x8A (Bracket B + Deck A/B)
D-16	321-904A	Bracket-L, Deck
D-17	TRQ1836J	Screw, TRQ2+3x8A (For Bottom + Bracket-L)
D-18	TRQ1836J	Screw, TRQ2+3x8A (For Deck + Bracket-L)
D-19	554-612B	SW Power SDLIP
D-20	MRC1830J	Screw (For Power SW)
D-21	321-903A	Bracket-R, Deck
D-22	TRQ1836J	Screw, TRQ2+x8A (For Bottom + Bracket-R)
D-23	517-117A	Tape counter
D-24	324-334A	Holder, Jack-PWB
D-25	TRQ1836J	Screw TRQ2+3x8A (For Bottom + Holder -Jack, PWB
D-26	412-250A	Deck Ay-L
D-26-1	419-004B	Deck Mech, JSKS-91FMRF PB-55
D-26-2	221-500A	Cover, CST-Mechanism
D-26-3	353-022B	Screw (For Cover Deck Mech)
D-26-4	273-802A	Knob, CST-Play (F.F.)
D-26-5	273-801C	Knob, CST Function (RWD)
D-26-6	273-801D	Knob, CST-Function (Stop/Eject)
D-26-7	273-801E	Knob, CST-Function/Eject)
D-26-8	273-801F	Knob, CST-Function (Pause)
D-26-13	558-028A	S/W, Auto-Tape Selector (For CrO_2
D-26-14	353-022A	Screw, Special (For SW Fix)
D-27	412-250B	Deck Ay-R
D-27-1	419-004A	Deck Mech, JSKS-92FMRF,RP-55
D-27-2	221-500A	Cover, CST-Mech
D-27-3	353-022B	Screw (For Cover Deck Mech)
D-27-4	273-801A	Knob, CST-Function (REC)
D-27-5	273-801B	Knob, CST-Function (Play)
D-27-6	273-801C	Knob, CST-Function (F.F.)
D-27-2	273-801D	Knob, CST-Function (RWD)
D-27-8	273-801E	Knob, CST-Function (Stop/Eject)
D-27-9	273-801F	Knob, CST-Function (Pause)
D-27-10	451-145E	Belt, Counter
D-28 ⚠	641-715C	Trans Power
D-29	TRQ02236J	Screw, Tapping TRQ2+4x8A (For Power Trans)
D-30	265-024A	Foot CA-940
D-31	TRQ1836J	Screw, TRQ2+3x8A
D-32	472-610B	Felt
D-33	213-252A	Cabient
D-34	353-633A	Screw, Special (For Cabinet, side)
D-35	TRQ1836J	Screw, TRQ2+3x8A FBK (For cabinet-Rear)
D-37	MRC1830J	Screw (For Tape-Select SW)
D-38	353-025B	Screw Special (For Cabinet side)
D-39	TRQ1836J	Screw, TRQ2+3x8A (For Deck + Bracket-R)
D-40	562-024A	CE LUG, Nylon
D-41	354-602C	Washer Nonmetal (For Bracket A Deck)
E-1	313-500C	Chassis, Back
E-2	TRQ1836I	Screw, TRQ2+3x8A FBK (For Back chassis + Bottom chassis)
E-3	681-003D	Power Cord
E-4	324-348A	Holder, Cord
E-10	353-025B	Screw Special (For RCA Jack)
F	511-051A	PWB Ay Main
	511-052A	PWB Ay MIC & Headphone
	564-017E	Cord Phono 700m/m

Deck mechanism

Ref. No.	Mfr's Part No.	Description
1	99X-0950	Chassis
2	99X-0951	Shift arm Ay
3	99X-0952	Idler Arm (HT) Ay
4	99X-0953	Pause Arm
5	99X-0954	Pause Lever (B) Ay
6	99X-0955	Stop Lever
7	99X-0956	FF Lever (H)
8	99X-0957	Rew Lever (H)
9	99X-0958	Play Lever (S) Ay
*10	99X-0959	Rec Lever (C)
*11	99X-0960	Rec Lever (BH)
12	99X-0961	RC Arm Ay
13	99X-0962	Lock Cam (C)
14	99X-0963	Lock Cam (B) Ay
17	99X-0964	RC Lock Arm (N) Ay
18	99X-0965	Head Chassis
*19	99X-0966	Rec Arm
20	99X-0967	Motor Holder
21	99X-0968	Button Holder (B)
25	99X-0969	Collar
27	99X-0970	Button Shaft
28	99X-1061	Motor Pulley
30	99X-0972	Pause Cam
31	99X-0973	FF Gear
32	99X-0974	Bush
33	99X-0975	Capstan Holder
34	99X-0976	Bush
35	99X-0977	Lever Holder (A)
36	99X-0978	Lever Holder (B)
38	99X-0979	Head Base
39	99X-0980	P Rolr Arm Ay
40	99X-0981	T Reel Ay
41	99X-0982	S-Reel Ay
42	99X-0983	Reel Base Ay
44	99X-0984	Clutch Arm Ay
45	99X-0985	Gear-C
*46	99X-0986	Rec Sensor
47	99X-0987	Flywheel Ay (1)
48	99X-0988	Lock Arm (H)
49	99X-0989	Eject Lever (F)
50	99X-0990	Buttcn Lever
51	99X-0991	Cassette Case
52	99X-0992	Cst Clamp
54	99X-0993	Auto Pulley
55	99X-0994	Auto Gear
56	99X-0995	Auto Cam Gear
57	99X-0996	Auto Clutch
58	99X-0997	Auto Arm (B)
59	99X-0998	Auto Lock Arm
60	99X-0999	Damper Ay
62	99X-1000	Play Idler
63	99X-1001	Auto Belt
64	99X-1062	Drive Belt
65	99X-1063	FR Belt
66	99X-1004	Motor Cushion
67	99X-1005	Housing Ay
68	99X-1006	Shift Arm Spring
*69	99X-1007	Rec Lever Spring (B)
70	99X-1008	FF Lever Spring
71	99X-1009	Rew Lever Spring
72	99X-1010	Lever Spring
73	99X-1011	Cam Spring
74	99X-1012	Pause Cam Spring
75	99X-1013	Head Chassis Spring
77	99X-1014	RC Arm Spring
78	99X-1015	Head Spring
79	99X-1016	Roller Spring
80	99X-1017	RC Lock Arm Spring
81	99X-1018	Head Chassis Rtn Sp
82	99X-1019	Clutch Arm Spring
83	99X-1020	Back Tension Sp
84	99X-1021	Lock Arm Spring
85	99X-1022	Eject Lever Spring
88	99X-1023	Pack Spring
89	99X-1024	Auto Sensor Sp
90	99X-1025	Auto Clutch Sp
91	99X-1026	Auto Lock Arm Sp
92	99X-1027	Cst Case Sp
93	99X-1028	Auto Clutch Felt
94	99X-1029	RP Head
95	99X-1030	E Head
96	99X-1031	Motor
99	99X-1032	Screw (A)
98	99X-1033	Screw (B)
100	99X-1034	Screw (C)
101	99X-1035	Screw (D)
103	99X-1036	Leaf Sw
104	99X-1037	Leaf Sw
106	99X-1038	Reel Washer
107	99X-1039	Lumiler Washer
108	99X-1040	Plain Washer
110	99X-1041	Poly Washer
111	99X-1042	Poly Washer
113	99X-1044	Oil Stop Washer
116	99X-1045	2x4 Tap Tite Screw
117	99X-1046	2x5, Tap Tite Screw
118	99X-1047	2x6 Tap Tite Screw
121	99X-1048	2.6x4 Tap Tite Screw
122	99X-1049	2.6x5 Tap Tite Screw (Flat)
123	99X-1050	2.6x8 Bind Tap Tite Screw
124	99X-1051	2.6x13 Tap Tite Screw
*125	99X-1052	2.6x22 Dia Screw
126	99X-1053	3x8 Binding Screw
127	99X-1054	2x8.5 Binding Screw
128	99X-1055	2x9 Washer Head Screw
129	99X-1056	2.6x5 Tapping Screw
130	99X-1057	2.6x6 Tapping Screw
131	99X-1058	Motor Screw
*132	99X-1059	D=2.0 E-Ring
136	99X-1060	Lock Arm Seal

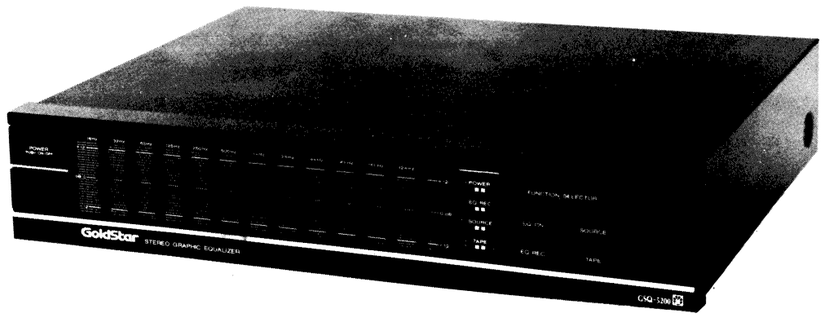
NOTE: Record-play back deckmechanism is consisted of all of the parts and play back deckmechanism is consisted of the others except expressing with "*".

SCHEMATIC DIAGRAM



STEREO GRAPHIC EQUALIZER

MODEL: GSQ-5200



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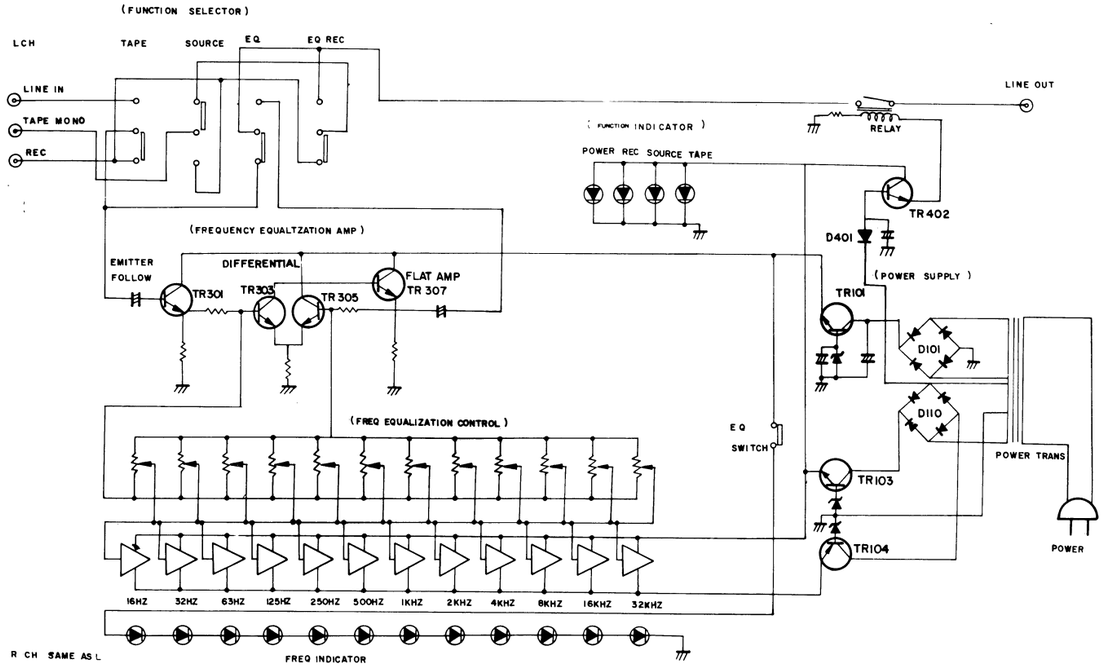
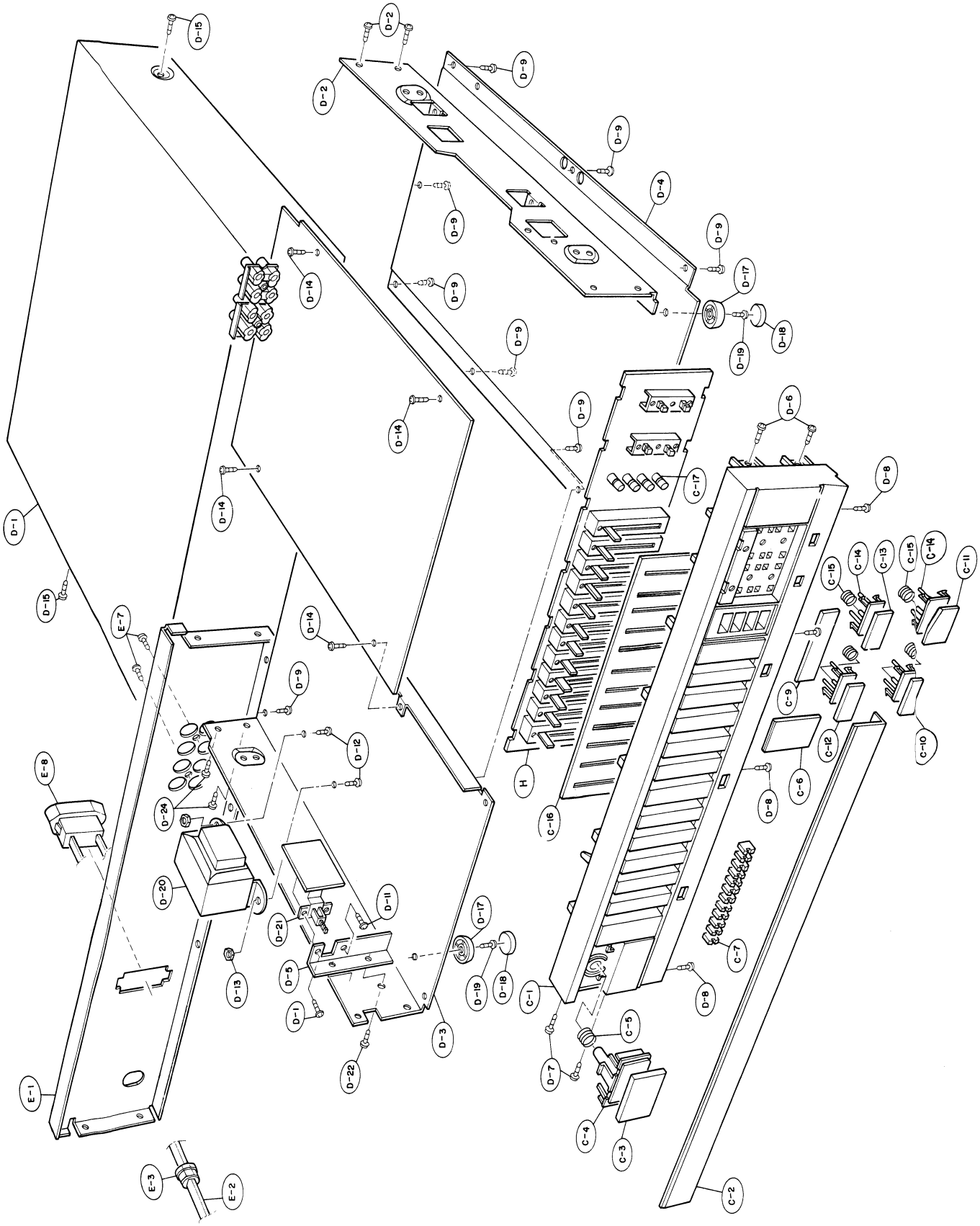
SPECIFICATIONS

EQ Variable Range Ratio	±12dB
Center Frequency Error	±10%
Input Capacity	.8V/rms
T.H.D. (Input:1V, Frequency: 20-30kHz)	0.02%
Intermodulation Distortion	0.02%
Frequency Response(–3dB, EQ. VR. Flat)	5~80,000Hz
Power Bandwidth (THD: 0.05%, 1/2 Output Power)	5~80,000Hz
S/N Ratio	90dB
Channel Separation	.1kHz: 45dB, 10kHz: 35dB
Cross Talk	.1kHz: 70dB, 10kHz: 50dB
Impedance	Input: 47kΩ, Output: 4.7kΩ
In/out Ratio (EQ:on, EQ V.R: Flat Position)	±0.5dB
Channel Difference	.E.Q. Flat : ±0.5dB (EQ. VR: Flat) E.Q. Max. : ±1 dB(EQ. VR.: Max)
Semiconductor	12IC, 12TR, 6 Diode
Power Supply	AC 220V 50Hz
Size	.278 x 65 x 345mm
Weight	.2.5kg

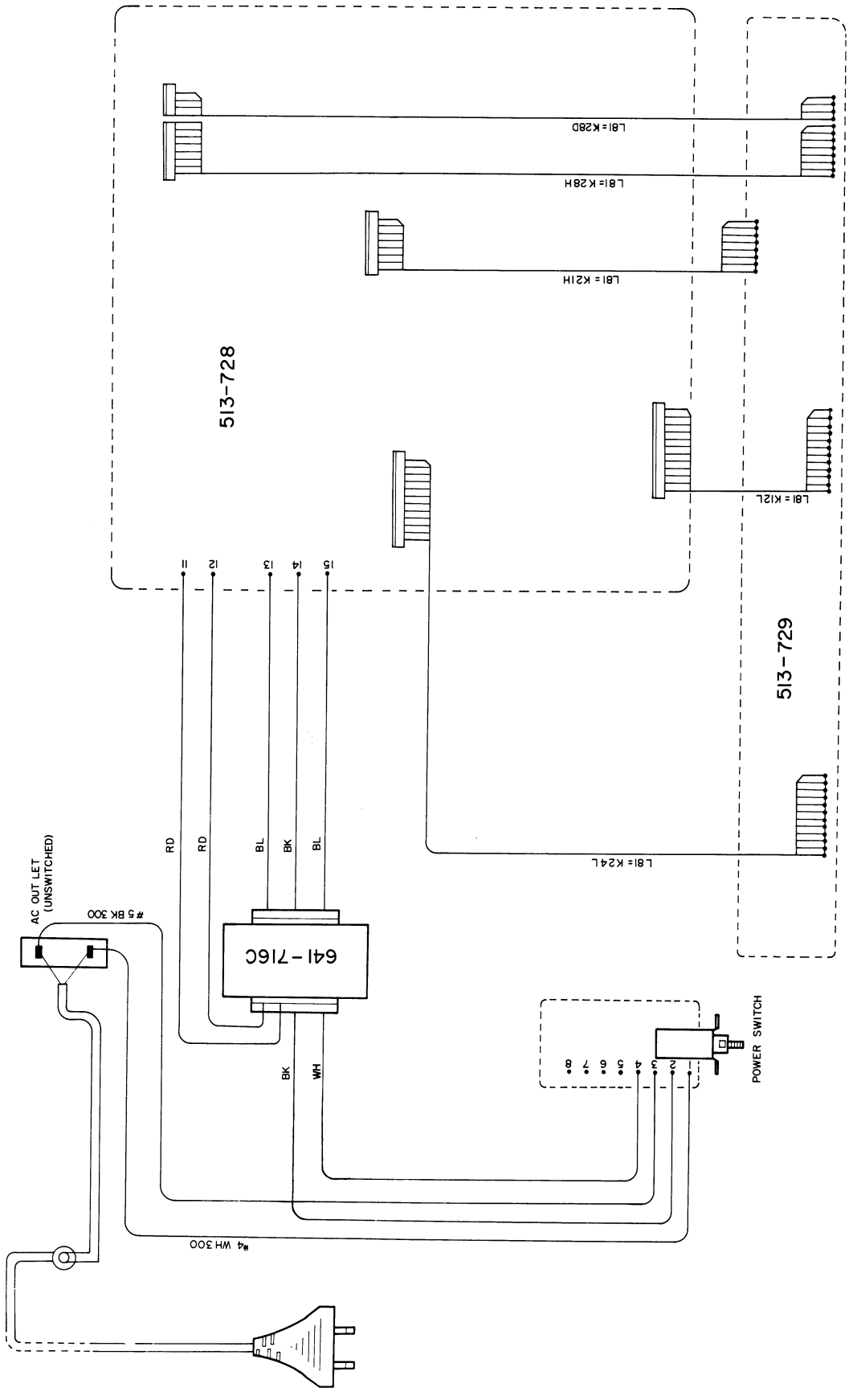
BLOCK DIAGRAM



EXPLODED VIEW

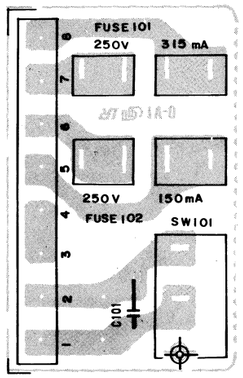


WIRING DIAGRAM

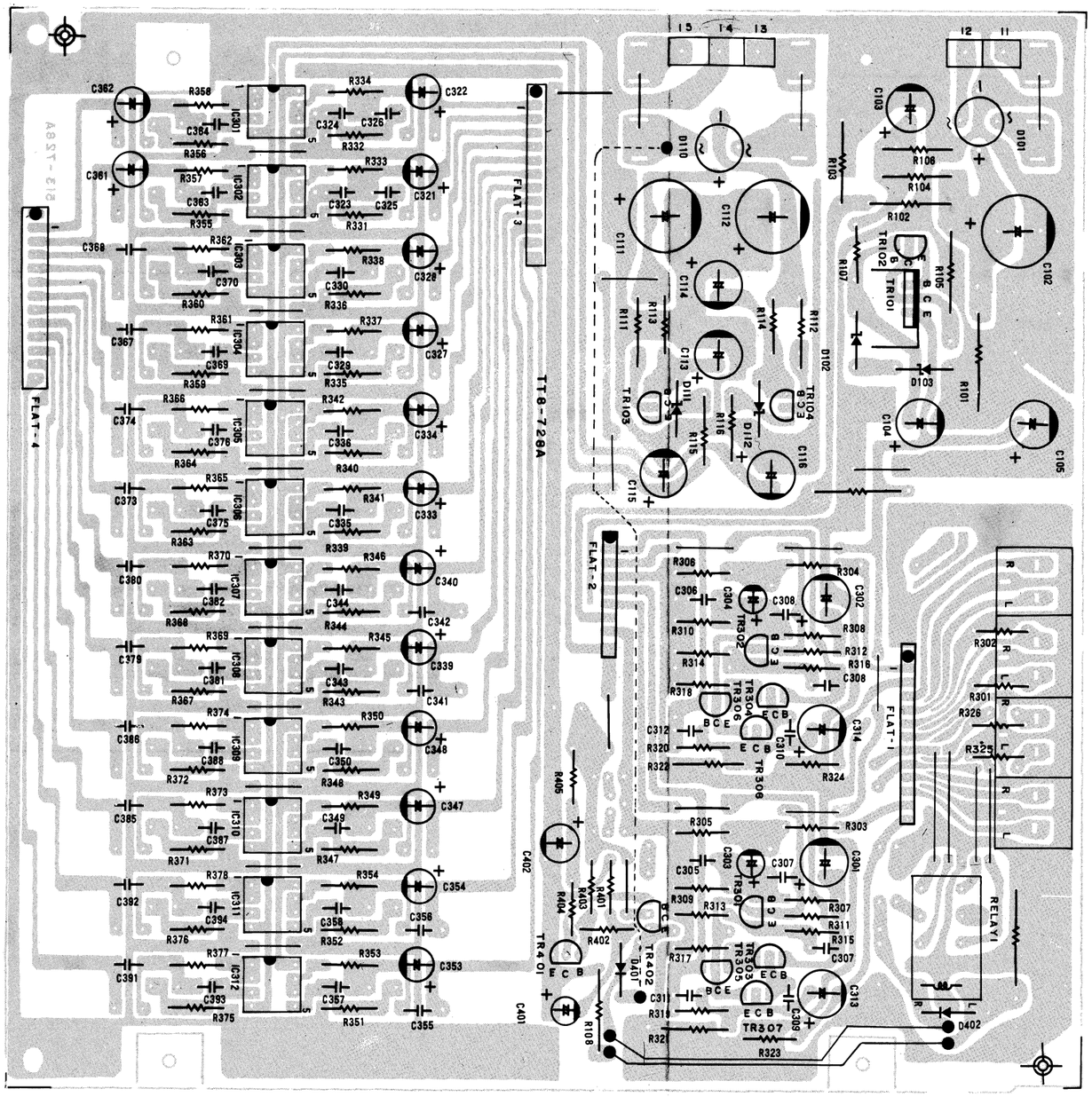


P.C. BOARD ASSEMBLY (COMPONENTS SIDE)

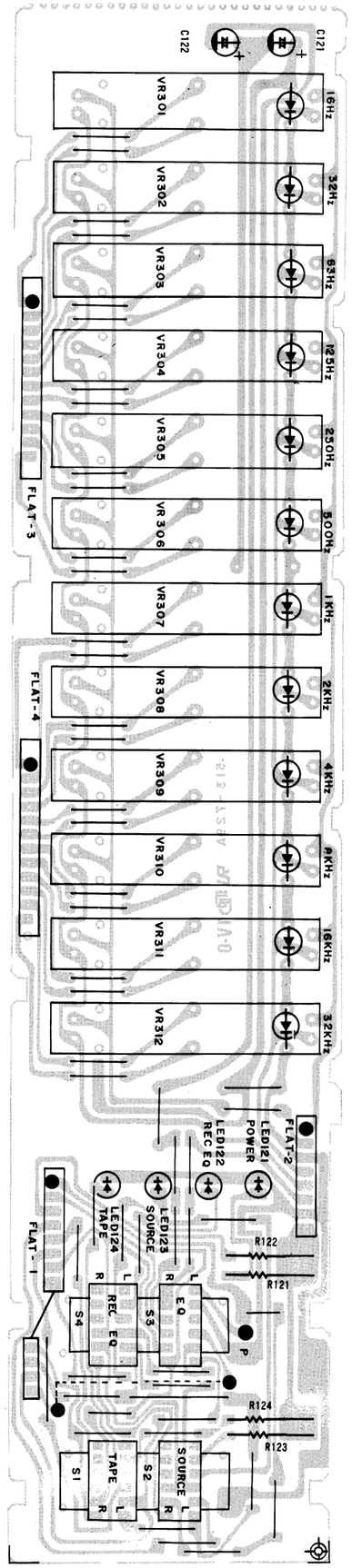
SW2 P. C. BOARD



MAIN P. C. BOARD



SW1
P. C. BOARD



ELECTRICAL PARTS LIST

CAUTION: A ⚠ in the schematic diagram and the parts list designates components which have special characteristics important to safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2 in this manual. Do not harm the safety of the receiver through improper servicing.

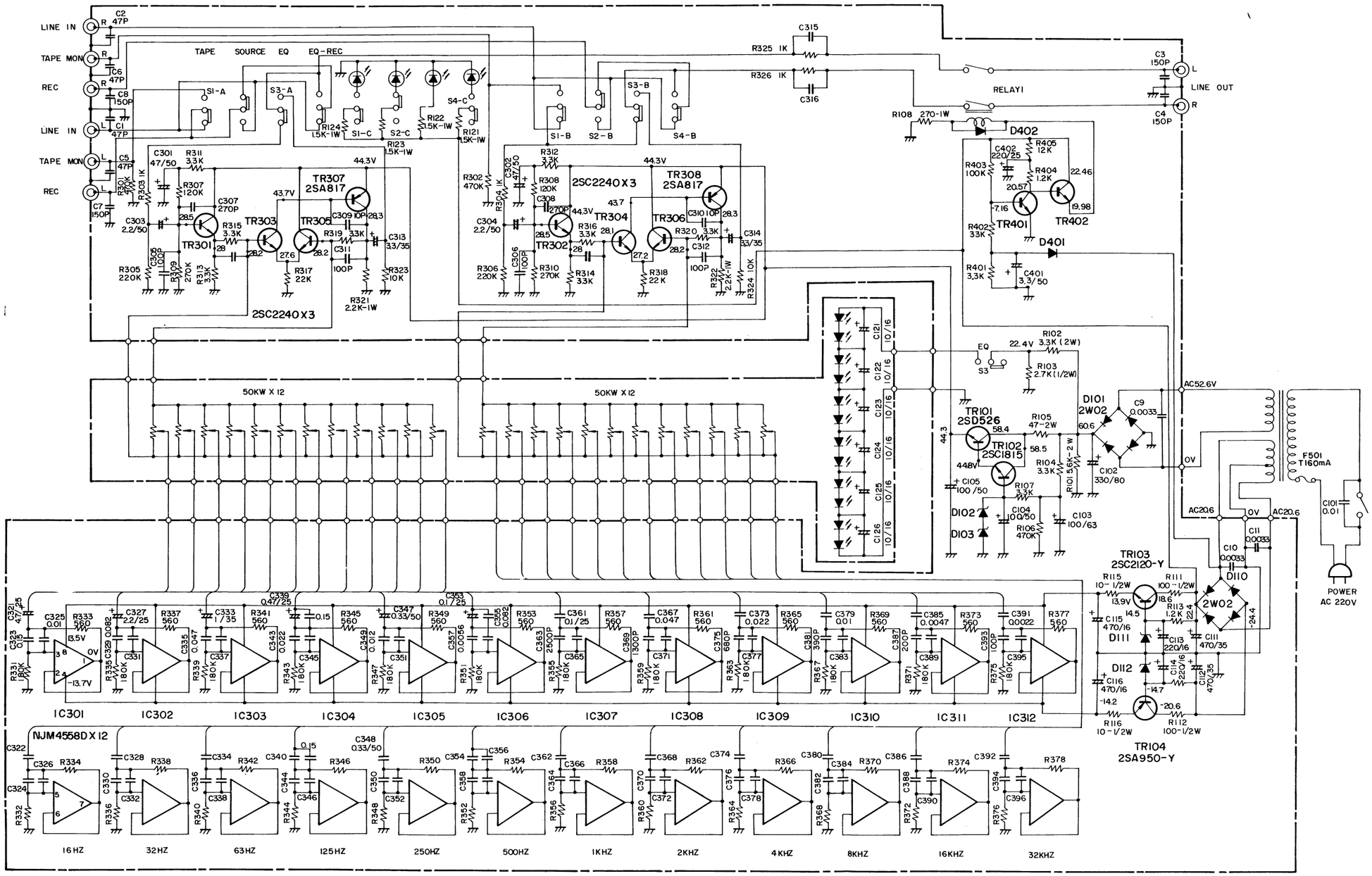
Ref. No.	Mfr's Part No.	Description
INTEGRATED CIRCUITS & TRANSISTORS		
IC101-312	668-051B	IC, NJM4558DX-Op Amp
TR101	665-708A	TR, KTD526-0
TR102	665-812B	TR, KTC1815-Y
TR103	665-830B	TR, KTC2120-Y
TR104	665-831B	TR, KTA950-Y
TR301-306	665-817B	TR, KTC2240-BL
TR307,308	665-833B	TR, KTA817A-Y
TR401	665-812B	TR, KTC1815-Y
TR402	665-830B	TR, KTC2120-Y
DIODES		
D101	652-612A	Diode, Rect 2W02
D102	654-607G	Diode, Zener ZPD-20
D103	654-607E	Diode, Zener ZPD-24
D110	652-612A	Diode, Rect 2W02
D111,112	654-607C	Diode, Zener ZPD-15
D401	652-005D	Diode, Rect DS4002
D402	652-005D	Diode, Rect DS4002
LED121-124	653-636D	LED, SLR54GC3-H

Ref. No.	Mfr's Part No.	Description
MISCELLANEOUS PARTS		
VR301-312	612-621A	VR, SV308GPC1 15LB W50K
	554-633C	SW, Source/Tape
	554-633D	SW, EQ/REC EQ
	585-101B	Fuse, 5x20 250V 160mV (For AC 220V)
	576-002A	Jack Block S-437P-Line/Tape
	586-101A	Fuse, Houlder KS Clip Type 5x20
	557-011A	Relay, RZ-12
R108	RS271J07	R, Metal Oxide 270-J 2WP
R401	RD332J22	R, Carbon Film 3.3K-J 1/4W
R402	RD331J01	R, Carbon Film 33K-J 1/4W
R403	RD104J22	R, Crabon Film 100KJ 1/4W
R404	RD122J22	R, Carbon Film 12KG 1/4W
R405	RD123J22	R, Carbon Film 12KJ 1/4W
C401	CE335F01	C, Electrolytic 3.3μF 50V
C402	CE227001	C, Electrolytic 220μF 25V

MECHANICAL PARTS LIST

Ref. No.	Mfr's Part No.	Description
C-1	258-523A	Panel Front
C-2	246-510C	Deco Front (With Inlet)
C-3	273-800A	Knob, Power
C-4	324-331A	Holder, Power-Knob
C-5	442-634X	Spring Power Knob
C-6	235-520A	Window Led
C-7	273-517A	Knob EQ Band Vol
C-9	273-510A	Knob Deco
C-10	273-511F	Knob Deco Tape
C-11	273-511L	Konb Deco Souce
C-12	273-511M	Knob Deco EQ on
C-13	273-511N	Knob Deco EQ Rec
C-14	324-511A	Holder Knob (B)
C-15	442-634G	Spring Knob
C-16	221-989A	Cover Slide Vol S/W
C-17	324-321A	Holder, Led Guide
D-1	213-520A	Cabinet
D-2	315-510A	Frame Side
D-3	313-510B	Chassis Bottom
D-4	256-520B	Plate Bottom
D-5	321-410A	Bracket Power SW
D-6	TRQ1830J	Screw, TRQ2+3x6A (Front + Frame Side)
D-7	TRQ1830J	Screw, TRQ2+3x6 (Front + Chassis Bottom)
D-8	TRQ1830J	Screw, Tapping TC3+3x6 FZMY (Front + Chassis Frame, Plate Bottom)
D-9	TRR1830J	Screw, TRR3+3x6 (Plate Bottom + Chassis, Frame Back)
D-11	MRC1830J	Screw (Fix Power SW)
D-12	MRC1836J	Screw, MRC+3x8 (Fix Power Trans)
D-13	NHA1800J	Nut, NH1-3 FZMY (Fix Power Trans)
D-14	TRQ1830J	Screw, TRQ2+3x6A (Fix Main PWB)
D-15	353-633A	Screw, Special (Fix Cabinet, Side)
D-17	265-024A	Foot CA-940 (Mould Only)
D-18	472-610B	Felt (Under Foot)
D-19	TRQ1830J	Screw, TRQ2+3x6A (Fix Foot)
D-20 ⚠	641-716C	Trans Power 220V 50Hz
D-21	554-612B	SW Power
D-22	TRQ1822J	Screw, TRQ2+3x4A (Fix Bracket Power SW)
D-23	TBQ1830J	Screw, TBQ+3x6 Fzmy (Frame Side + Pannel Back)
D-24	TBQ1830J	Screw TBQ+3x6 Fzmy (Chassis Bottom + Pannel Back)
D-25	TRQ1822J	Screw TRQ2+3x4A (Fix Bracket Power SW)
D-26	TRQ1830J	Screw, TRQ2+3x6A (Back + Frame Side + Bottom)
E-1	258-512C	Panel Back
E-2	681-003D	Power Cord
E-3	324-348A	Holder, Cord
E-4	552-605A	SW, Slide SS203N AC4KV
E-5	334-007B	Stopper Switch
E-7	TRQ1830I	Screw, TRQ2+3x6A FBK
E-8	565-004B	AC Out-Let
G	511-728B	PWB Ay MAIN
G-11	TRQ-1830J	Screw, TRQ2+3x6A (Heat Sink + TR101)
	255-107B	Heat Sink
H	511-729A	PWB Ay, Switch
	564-017E	Cord Phone 700m/m

SCHEMATIC DIAGRAM



NOTES : 1. ALL RESISTOR VALUES ARE IN OHM.
2. ALL CAPACITOR VALUES ARE IN MICROFARAD.
3. THIS SCHEMATIC DIAGRAM MAY BE CHANGED FOR IMPROVEMENT OF PERFORMANCE WITHOUT NOTICE.